

Desert

OCTOBER, 1958 . . . 35 Cents



Tombstone

By JOSEF and JOYCE MUENCH

From this early mining town in southeastern Arizona has come the rich tradition of the Old West—the wickedness, gun-play, feud between law and outlaw, stage holdups and Indian raids.

Even with surface changes of electric lights and paved streets, Tombstone is history, from the Bird Cage Theater (now a museum), the Crystal Palace saloon, the newspaper *Epitaph*, and the world-famous Lady Banksia Rose to Boothill Cemetery at the edge of town.

Most of the early buildings date from 1879 to 1882. Two years before the first date Ed Schieffelin discovered the Lucky Cuss, instead of the tombstone he had been warned was all he could expect in the area. The early 1880s witnessed the Earp-Clanton feud, climaxed by the notorious battle at the O.K. Corral. It was after this that Sheriff Slaughter ordered crooks out of town and saw to it that they went.

Water in the mines, still believed to hoard riches, closed them down, but Tombstone, "the town too tough to die," is now a pleasant resort community with an incomparable climate and all its glowing memories.



DESERT CALENDAR

September 27-October 5—New Mexico State Fair, Albuquerque.
 October 1-5—San Bernardino County Fair, Victorville, California.
 October 1-10—Aspencares to Carson National Forest, from Taos, N.M.
 October 2-5—Eighth Annual Desert Empire Fair, Ridgecrest, Calif.
 October 3-4—Candlelight Procession on 3rd, Feast Day of St. Francis de Assisi on 4th, Ranchos de Taos and Santa Fe.
 October 3-5—Greenlee County Fair, Duncan, Arizona.
 October 4—Fiesta and Dance, Nambe Pueblo, New Mexico.
 October 4-5 — Santa Cruz County Fair and Rodeo, Sonoita, Arizona.
 October 4-5 — Apple Days, Julian, California.
 October 4-5 — Third Annual Ridge-runners Jeep Cruise from Desert Center (write to A. Thomas, 1110 Magnolia, El Cajon, Calif., for information).
 October 4-5—Elks Rodeo, Victorville, California.
 October 5-6 — Lions Club Annual Roping Show, Battle Mountain, Nevada.
 October 8-12—Eastern New Mexico State Fair, Roswell.
 October 10-11—Weber County Products Days, Ogden, Utah.
 October 10-12—Covered Wagon Daze and Pegleg Liars Contest, Borrego Springs, California.
 October 10-12 — Graham County Fair, Safford, Arizona.
 October 10-12 — Latter-Day Saints General Conference, Salt Lake City.
 October 11-12—Fifth Annual Colorado River Cruise from Blythe, California, to Martinez Lake, Ariz.
 October 11-12—Tri-State Fair, Deming, New Mexico.
 October 11-12 — 20-30 Club Junior Rodeo, Phoenix.
 October 11-12—Nevada State Senior Golf Tournament, Las Vegas.
 October 16-18 — Four Corners Geological Field Trip and Convention, Gallup, New Mexico.
 October 16-19 — Pima County Fair, Tucson.
 October 17-19 — Annual Pioneer Days, Twentynine Palms, Calif.
 October 17-19 — Helldorado, Tombstone, Arizona.
 October 18—Allied Artists Art Festival, Lancaster, California.
 October 19 — Ranch Fiesta, Yuma, Arizona.
 October 20-27 — Eighth Annual Trailer Rally, Palm Springs, Calif.
 October 22-23—Sahara Cup Powerboat Races, Lake Mead, Nevada.
 October 23-26—Cattle Call, Brawley, California.
 October 27-29—Southwest Cattle Festival, Clovis, New Mexico.
 October 31—Chaves County Youth Parade and Hallowe'en Festival, Roswell, New Mexico.
 October 31 — Annual Mardi Gras Parade, Barstow, California.
 October 31—Jaycee Hallowe'en Parade, Lehi, Utah.
 October 31-November 1 — Nevada Admission Day Festivities, Carson City.
 October 31-November 11 — Arizona State Fair, Phoenix.



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New Shade Tree For the Desert . . .



This hybrid from the Tex Reese nursery is now eight and a half years old.

Nurseryman Tex Reese of the Tupelo Gardens, Rt. 2, Perris, California, tells about the amazing new shade tree he propagated expressly for the lower and hotter desert climes — a fast-spreading thick-foliaged mesquite hybrid. Reese's mesquite, combining beauty and hardiness, may blossom into one of the most significant Southwestern landscape advances in years.

By TEX REESE

CROSSING SOUTHERN Arizona and the Imperial Valley in California with my son on a summer day 25 years ago I was impressed—perhaps it would be more accurate to say depressed—by two things—the extreme heat, and the sparsity of good shade trees.

When I asked some of the old-timers about the lack of shade trees, they explained that the fine maples and other species which grow so splendidly in the east and midwest had been unable to adapt themselves to the desert.

As a nurseryman, this problem interested me greatly, and I resolved to see what might be done about it. And this was the beginning of a quest which continued for many years. I was seek-

ing a tree in which would be combined the qualities of rapid growth, dense shade, and adaptability to an arid climate.

My search virtually led me around the world, and it was not until years later that I came upon a promising species in a small remote valley in the foothills of the Andes Mountains in South America. This tree, *Prosopis Glandulosis*, is closely related to the native mesquite of the Southwest. One important difference, however, is that it never acquired, or had discarded, the thorns so characteristic of the honey and screwbean mesquites of the North American desert states. But what it lacked in thorns it made up in feminine beauty and queenly grace.

Seeds were secured from the South American thornless mesquite. In our hot desert they produced a motley lot of seedlings of intolerable irregularity in shape and growth. Only occasionally did the seeds yield a creditable type of tree. When I crossed them with our shaggy honey mesquite there was little improvement, due to the fact that the wind and the bees which do the pollinating, are not concerned with quality.

Again I had to take up the search—for a desirable pollinator for our unstable tree from South America. It was many months later after many

trips into the desert that, following a rumor, I located a native male mesquite—the only exclusively male mesquite I have ever found. It was on the Mojave Desert, a 3-mile hike from the nearest roadway.

This grand old tree is a monarch in its own right, with 3½-foot trunk—grizzled veteran of more than a hundred years of heat and desert sandstorms.

I believed I had found the right tree, but how could one cross-pollinate two trees located 300 miles apart, with a 35-day difference in flowering season?

It took three more years to achieve my goal. Finally I was able to arrive at the Mojave tree at the right stage to obtain the pollen from its flowers, and then there was the problem of keeping it at the right temperature for 35 days until the South American tree was in flower.

We dusted 10 flower clusters, and then covered them with paper bags to prevent wind and bees from bringing other pollen into the fertilization process. It was a glorious day when we found that a couple of seed pods had started to develop, and in due time there were a few of the mature seeds we needed.

After this initial success we worked out a method enabling us to gather pollen in greater quantity, and to exclude wind and bees from the entire tree, thus giving us the hybrid seeds in greater quantity.

Tests with these crosses brought surprising results—a new family of the sturdiest hybrids I have ever seen—dense with brilliant green foliage, an evergreen with a very distinctive and artistic leaf pattern, uniform in shape and color—a beautiful and majestic tree.

It is a fast growing tree which will survive and grow in the hottest areas without irrigation if there is a water table which can be reached by the long tap-root that burrows its way into the earth to a depth twice the height of the tree.

Further cross-breeding has enabled us to produce trees either with or without the usual mesquite thorns.

And now that we have mated the tough old Mojave veteran with the delicate Lady *Prosopis* from south of the Equator, perhaps their offspring will prosper and spread in the great desert Southwest, fulfilling the prophecy that "The wilderness and the solitary place shall be glad for them; and the desert shall rejoice and blossom as the rose."

Trail-Blazer of Grand Canyon



Capt. William Wallace Bass pioneered the development of Grand Canyon as one of the world's outstanding tourist attractions. During the early years of this century thousands of persons were entertained at his hotel on the South Rim, and were able to explore the very bowels of the Canyon over trails he had made. Today Capt. Bass' son is carrying on the spirit of the work started 75 years ago. Bill Bass' nightly color slide programs at his Wickenburg Motel are giving tourists an opportunity to see the beauty of the Southwest which lies beyond the main-traveled highways.

By NELL MURBARGER

BILL BASS has always felt cheated because he wasn't born at the Grand Canyon.

"I should have been," he said one day this summer as we visited at his home in Wickenburg, Arizona. "I would have been, too—except in 1900 there wasn't a doctor or midwife within 70 miles of Dad and Mother's homestead on the South Rim. Consequently, a few days before I was due, Mom climbed into a stagecoach behind four half-wild brones and jolted over 73 miles of rough road to the nearest town, camping one night on the way. A few days after my birth at Williams, she jolted back home—and that's the only reason I can't claim to have been the first white child born at Grand Canyon . . ."

At the time of Bill's birth the Bass name was well known in northern Arizona where Bill's father had settled 17 years earlier. First white man to establish a home on either rim of the

Canyon, Capt. William Wallace Bass immediately realized the potential of this mighty abyss, and became a pioneer promoter of the Canyon as a tourist attraction.

Born at Shelbyville, Indiana, in 1849, Bass entered railroading as a young man. When his health broke and doctors told him he had but a few months to live, he quit his New York job and drifted West where a change of climate and work restored his strength.

Three years of wandering brought him to Williams, then a frontier town with a few false-fronted buildings and a row of tents strung along the railroad tracks. The surroundings so appealed to Bass he located a piece of ground on Cataract Creek, seven miles north of town, and there established residence in a cave.

Bill's father first saw the Grand Canyon as the result of a story told him by Emma Lee, one of the widows

of John D. Lee, executed six years earlier for his part in the Mountain Meadows massacre.

"Emma, who was then a resident of Ashfork, told Dad that during the several years Lee had been in hiding from the law, he had cached three five-gallon cans filled with gold nuggets in the canyon. She had a map which she said Lee had made to mark location of the cans, and she gave either this map or a copy of it to Dad, together with some of the nuggets Lee had found."

Soon after beginning his treasure hunt, Capt. Bass realized that the Grand Canyon possessed an intangible worth far greater than all the gold that might be secreted in its depths. Under the impetus of its strange spell he established a permanent home on the South Rim, about 25 miles west of the present site of El Tovar.

In those days, of course, there was no swank El Tovar Hotel, Bright An-



Capt. William Bass, left, and Capt. Jack Crawford, poet-scout who visited the South Rim Camp.



Ada Diefendorf Bass. Life at the Canyon was far removed from what it had been in the East.

gel Trail or Phantom Ranch; and not until 30 years later would Grand Canyon be set aside as a National Park. In that year of 1883 there was only Capt. Bass at the west end of the Canyon, and John Hance at the east.

"With the help of two Havasupai Indians, Dad first built a burro trail from his rim camp down the canyon wall to Mystic Spring, and with his burros loaded with supplies and geology and astronomy books, he spent his first winter roaming and studying the Canyon. By the spring of 1884 he was convinced that here was the greatest potential tourist attraction in the West, and that summer he equipped a small rustic camp for photographers, artists, geologists, writers and sight-seers.

"The following year he extended his trail to the Colorado River, a distance of seven miles; and working entirely on his own, with neither moral nor financial support, he laid out a road from his camp to Williams, bought an old four-horse stagecoach, and established the first passenger service from the railroad at Williams and Ashfork to Grand Canyon.

"This stage was the coach sent out for General Miles' use during the Indian raids," recalled Bill. "Dad used it until the wheels no longer could be repaired."

By 1885 Capt. Bass was making regular trips carrying tourists from the railroad to his camp, where they were

quartered in several wooden-floored tent-houses scattered among the junipers and pinyons. Meals were prepared in a small wooden building, set apart from the sleeping quarters, and eaten in a large circus tent. Mounted on burros or horses supplied by their host, guests were taken down the precipitous trail to the river, where those with sufficient daring to cross the river in a canvas boat might proceed upward to the North Rim and Point Sublime.

Almost from the beginning Capt. Bass sought to interest the railroad in promoting the Canyon as a tourist attraction. In 1885 he succeeded in luring to his camp the general passenger agent of the Santa Fe. This executive, unfortunately, was not a man abounding in foresight, for upon returning to San Francisco he reported that Bass' proposal was not feasible. No one, he declared, would go that far only to see a hole in the ground!

After seven years on the South Rim, one day Bass' stage brought to camp a party of two men and three women from Prescott. One of the ladies was Miss Ada Diefendorf, a native of Worcester, New York, and more recently of Boston, who had come West to live with her aunt, and teach music. With Miss Ada primly mounted on a sidesaddle, the party rode horses down the steep trail to the Havasupai Indian settlement in Havasu Canyon. Miss Ada was proud of the fact that she

was one of the first white women to have ridden down the rugged Havasu trail.

Romance, as well as blisters, flowered on that trip—for two years later the former Boston music teacher became the wife of 43-year-old William Bass.

"Mother was only 25 and knew nothing about pioneer life—but she had what it takes!" proudly declared her son. "Not only was she the first white woman to rear a family on the South Rim, she was the finest business partner Dad could have found anywhere."

"Nearly 30 years of her life was spent caring and cooking for tourists. When no other guide was available she often escorted our guests to the river, and for months at a time stayed alone with us kids—73 miles from the nearest town—while Dad would be off somewhere on business, sometimes as far away as Washington, D.C.

"We had no surface water except the spring runoff from melting snow, and the July thunderstorms, but we caught as much of this as possible in small dams and cisterns. All our stock had to have water pulled up in buckets out of a cistern and poured into a trough.

"As a consequence, there were frequent occasions when there wasn't much water available for washing clothes. At such times Mother would load the soiled laundry on a burro,

make the hard trip down to the river, camp there overnight, wash and dry the laundry the next day, and on the third day pack it on the burro and start back up the trail to camp. That was doing it the hard way!

"Even trips to town were rugged. When Dad was still using the old General Miles stagecoach, it was his custom to break new horses to harness by driving a pair of wild broncs with a pair of mules. To hitch the team it was first necessary to hobble and blindfold the broncs.

"Soon as the traces were fastened, Dad would grab the lines and scramble up to the high driver's seat. Mother released the blindfolds, and as the team took off in a wild leap, she'd swing aboard the leather boot at the rear of the stage.

"There she would ride for several miles until the runaway team would slow down enough so she could take off the hobbles, and get inside the vehicle. Since we always had to camp overnight between our home and town, she often said she had prepared a meal or slept under every tree in the 73 miles between Ashfork and Bass Camp!"

Along with serving as a combination hotel keeper, guide, hostler, hostess, cook, laundress, chambermaid and frontier wife, Ada Bass reared three daughters and a son.

Even though he missed being born at Grand Canyon, Bill Bass may be said to have cut his teeth on that mighty gorge and he grew to manhood along its rim and in its depths.

"For the first 26 years of my life the Grand Canyon served progressively as my nursery, school, church, playground and workshop," declared Bill. "I made my first trip down Dad's old trail to the river when I was less than a year old. Mother often told how she loaded me into a kyack on one side of a burro and to balance the load put our old dog, Shep, into the opposite kyack."

During his early search for the Lee treasure, Capt. Bass discovered some promising gold, silver, copper and asbestos deposits. Since the asbestos mines were located on the north side of the river, it was virtually impossible to ship the ore.

In 1908 Capt. Bass built a cable crossing which spanned the Colorado at the foot of Bass Trail, and thereby afforded easier access to North Rim points and the Bass mines. It now became possible to work the mines at a profit, and by the time Bill was 12 years old he was in charge of the burro pack-train which carried ore up the trail to camp. Some of this asbestos showed the highest grade of any mined to that time, and was shipped

to France for use in the world's first fireproof theater curtains.

The original tramway, consisting of two cables and a small car capable of transporting nothing heavier than burros, was enlarged to four cables and a car large enough to carry a 1200-pound mule or horse.

Young Bill also wrangled the stage and saddle stock and helped in many other ways to care for the growing influx of tourists. Between 1885 and 1920, more than 5000 persons were entertained at Bass Camp, many of these being men and women of national prominence—the great Southwestern writer George Wharton James, artist Thomas Moran, Zane Gray, John Muir, Luther Burbank, Rex Beach, Henry Ford, John Van Dyke, Capt. Jack Crawford, and Lieut. J. C. Ives.

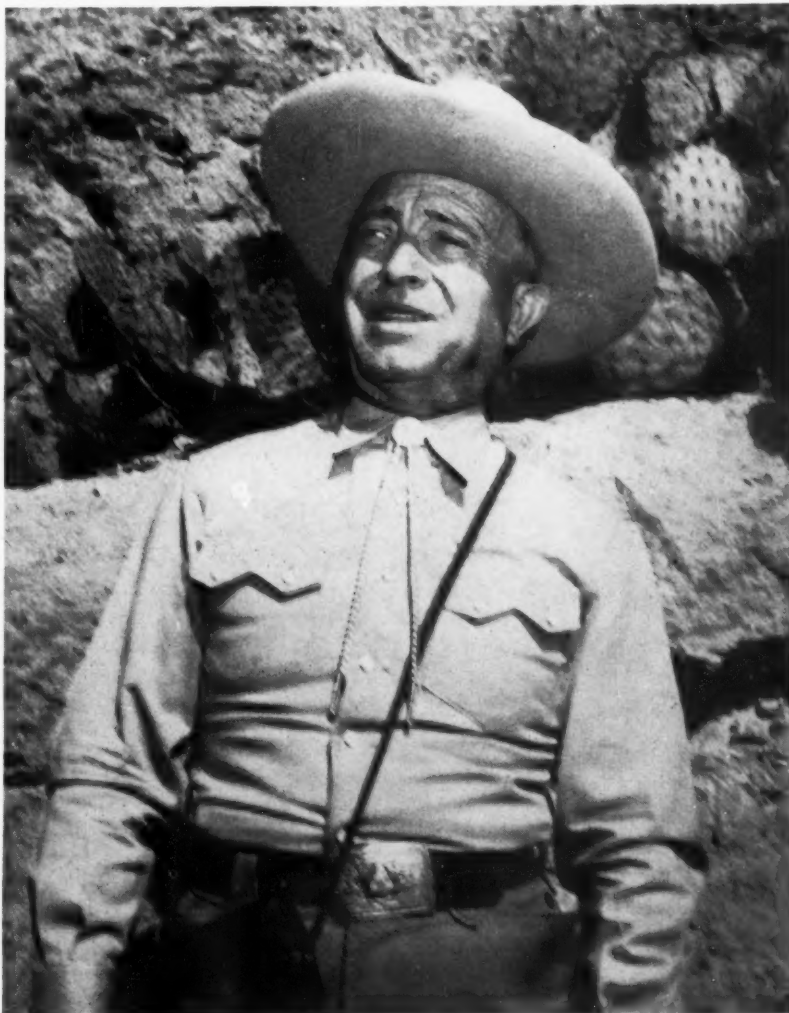
In the summer of 1914 Bass Camp welcomed its first horseless stage—a seven-passenger Studebaker purchased

by Capt. Bass in Phoenix for \$1500. The following year, partly as a result of this speedier mode of travel and two additional buckboard carriages, the Bases grossed \$21,000 at their lodge. It was a sum larger than they had ever cleared before, or would ever clear again.

During the first 35 years of white man's residence at Grand Canyon, Capt. Bass had a finger in every good thing that came there as a result of civilization. In 1894 he served as chairman of the first meeting held for the purpose of organizing a survey for a railroad from Williams to the Canyon, and was appointed superintendent of construction for that work. He was instrumental in establishing the first school at the Canyon, and by his own effort constructed more than 50 miles of trails within the Canyon, including the first trail to the North Rim.

His work in behalf of the Havasu-

Bill Bass. Photo by author.





Bass Tramway across the Colorado River.

pai Indians was virtually limitless. Not only did he give them seeds and teach them better ways of farming; he helped them get a school and post-office, and for a number of years regularly carried mail to them. Supplying them with modern medicines, he treated them in times of sickness and often supplied them with food and clothing.

But, like all things, the long and satisfying reign of the old Grand Can-

yon pioneer at last ran its course, and his empire began to topple. It was doomed from the day the Canyon was set aside as a national park; and when the Fred Harvey system moved in, the handwriting was on the wall.

Abiding by the old axiom, "If you can't lick them, join them," young Bill Bass began working for Fred Harvey as a chauffeur-guide in 1917, driving 1914 Pierce-Arrow limousines. In addition to the "Grand View Sight-

seeing Trip," then a regular feature of Grand Canyon visits, Bill occasionally took charter parties on long then-hazardous journeys to the North Rim via Lee's Ferry, and into the Painted Desert. During the years he was employed by the company in this capacity it was his privilege to show the Canyon to some of the most famous persons of that era, including the King of the Belgians, Marshal Foch, Douglas Fairbanks, Mary Pickford, Pola Negri, Tom Mix and others.

"When I would be hauling folks around showing them the sights, they'd ask me questions and I always answered the best I was able," recalls Bill. "Now and then, however, there would be someone in the party who was an authority on geology, botany, or some other subject, and if I made a mistake in my answer these experts would be quick to correct me. I didn't mind having them correct me—I appreciated it! I drank in this information, and in addition bought or borrowed books on plants, birds, geology, etc. The next time someone asked me that same question, I knew the answer. After several years folks began asking how I had possibly learned so much about the Canyon. I always told them, 'I acquired my education from the tourists!'"

When the Canyon concession franchise was awarded to the Fred Harvey Company, and the 12-room Bass Hotel was ordered removed from park property, Capt. and Mrs. Bass, on September 15, 1923, entertained their last paying guest at the time-honored hostelry. Soon afterward they moved to Wickenburg, and early in 1926 the Bass Trail, mining claims, millsite and all other properties at the Canyon were purchased by the Santa Fe Land Development Company for \$25,000.

It was Capt. Bass' wish to be buried atop a certain promontory which, as a consequence, became known as Bass Tomb, and later as Holy Grail Temple. Upon his death in 1933, at the age of 84, this last wish was carried out by his son who scattered his father's ashes over the magnificent sepulchre. Mrs. Bass survived her husband by 18 years, and at her death in 1951 was laid to rest beneath a large pine in the Grand Canyon cemetery.

After nine years in the employ of the Fred Harvey company, Bill Bass moved to Wickenburg in 1926 to be with his aging parents. Despite the fact that he was then 26 years of age, he enrolled in high school, subsequently married, and began to take an active part in community life.

It was natural that Bill would turn to catering to the traveling public, and his motel at the south edge of Wick-

enburg soon became a popular stopping place for tourists. For a man of Bill Bass' driving energy, however, it wasn't enough to operate a motel, hold offices in half-a-dozen fraternal and civic organizations, and serve on committees of everything from the Wickenburg Round-Up Club to the International Highway Association and the Audubon Society. He also had to have a hobby.

Since childhood he had known the fascination attached to tripping a camera shutter, and his quest for an avocation led into this familiar avenue. As color film improved in quality, he turned to this medium, bought cameras with progressively better lenses, and began the study of photographic technique.

He has gained recognition as one of the outstanding photographers of the desert country, and his closeups of bird, flower and wildlife subjects have been widely used by national publications. His 4000-foot film, *Enchantments of the Desert*, has delighted many thousands of Wickenburg visitors, and is one of the features of a program given each evening at his La Siesta Motel.

Soon after this program was initiated guests from everywhere would ask, before they registered: "Is this the place that has the wonderful colored picture programs of Arizona?"

"I've given a complete program for as few as two persons, and I've shown that same program to 100 or more," Bill explained. "I have presented programs varying in length from 30 minutes to an hour-and-a-half, every night of the week, 52 weeks a year, for a full 12 years!"

For the first 10 years, Bill's shows were presented in the patio of his motel. While Wickenburg has little inclement weather, there were times when this open-air arrangement was not too satisfactory, so two years ago Bill enclosed part of his patio into a small auditorium which he calls "The Cliff Room." Approximately 100 persons can be seated in this room at one time, and construction of a projected balcony will seat another 50.

Since Bill's purpose in showing his slides is to make known the scenic wonders of his state, he does not limit attendance to his own clientele, but extends a blanket invitation to guests registered at all other motels, hotels and dude ranches in the vicinity.

"Whether a man is patronizing my place or some other motel isn't important," said Wickenburg's Bill Bass. "The only important thing is for him to learn that there's far more beauty



Entrance to Bill Bass' attractive La Siesta Motel in Wickenburg. Rock formation at right forms one wall of the Cliff Room auditorium where free color slide programs are presented nightly for guests of the area. Photo by author.

in our Southwest desert country than he'll ever see roaring through it at 70 or 80 miles an hour.

"Actually," continued Bill, "I'm only trying to carry on an educational program started by my Dad, 75 years ago. Dad was so determined that tourists should see the hidden beauties

of the desert that he literally dragged them off the trains and carried them into the back country by stagecoach and burros. Because today's tourists don't have time to ride burros, I'm only trying to show them that same wonderful back-country through the medium of a slide-projector . . ."

ROAD NETWORK BILLBOARD RESTRICTIONS PROPOSED

The Department of Commerce announced tentative regulations which would assure some billboard-free driving on the 40,000-mile interstate highway system. The new Federal standards would limit the use of brand names on roadside ads; allow groups of billboards in "informational site" areas off the highway; and ban the use of moving signs.

The proposed standards would permit individual billboards—substantially smaller than present common billboard size—for rural advertisers whose places of business are located within 12 miles of the highway. But they would not permit more than one such sign a mile.

The proposed plan also would ban all signs from scenic areas.

Commerce Secretary Weeks said he visualized the states creating the informational sites—similar to rest stops—off the interstate highways in populated areas. Travelers would drive off the road into a landscaped area to inspect various ads on billboard panels. — *Yuma Sun*

UNIQUE GILA MONSTER SUBJECT OF NEW STUDY

TUCSON — The National Science Foundation has given the University of Arizona a \$12,000 grant for a study of the Gila Monster by the department of zoology, according to an announcement by Dr. Richard A. Harvill. The grant covers research to be conducted over a period of three years, beginning in the summer of 1958. In describing the project, University President Dr. R. A. McCauley said: "There is evidence that the Gila Monster may be a unique animal which occupies an important position in the animal kingdom."

"For instance, most animals in desert regions fall into two groups: those which must drink water or eat foods containing much water, and those which survive with virtually no water intake. Some actually refuse to accept water even when it is available. The Gila Monster, however, can live for months without water but, at the same time, will accept drinking water. If sufficient water is available the Gila Monster will immerse its entire body. It is thus obviously capable of a great range of adaptability in its environment."



The Sims Ceramics team—Alice and Earl. Roberts Photograph.

Craftsmen of Apple Valley . . .

Desert people generally are opposed to the bringing of heavy industry into the desert area—they want to keep the air pure and their highways uncongested. But any desert community would welcome the kind of industry which Earl and Alice Sims have established in Apple Valley on the Mojave Desert of California.

By RANDALL HENDERSON

ON HIS FIRST trip to California in 1931, Earl Sims' engine began sputtering as he motored through northern New Mexico. He stopped at the first garage, and the mechanic who repaired the faulty carburetor was a Laguna Indian.

That was Earl's first acquaintance with the Indians of the Desert Southwest. He was so impressed by the skill and intelligence of the Laguna mechanic he resolved that some day he would return to New Mexico and become better acquainted with the tribesmen of the adobe pueblos.

In recent years Earl and his wife Alice have returned many times to the pueblos along the Rio Grande, for it

was here that prehistoric tribesmen many hundreds of years ago were creating the designs which, in modified form, are used for the decoration of the Sims Ceramics now widely sold in the art and gift shops of the Southwest.

Today, in a busy workshop in Apple Valley, California, the Sims husband-and-wife team, with the assistance of some very skillful associates, are producing clay giftware that is distinctive in both design and quality. The background for this enterprise dates back even before the chance meeting with the Laguna garage mechanic in New Mexico.

Earl Sims, born in Roscommon,

Michigan, was a student of chemistry in Toledo, Ohio, in the 1920s. When he finished school his first job was with the Libby Glass Works doing qualitative analysis. One assignment on which he worked with associates for many months in the Libby laboratory was in developing ruby-colored lenses for railway signals.

Like many other midwesterners, Earl had the urge to go to California and when this became possible in 1931 he headed for Los Angeles. There he found employment with one of the major oil companies, and 10 years later he and Alice were married.

A few months later, following the Pearl Harbor tragedy, he enlisted in the armed forces and was assigned to duty with the Signal Corps. During his absence Alice took up ceramics as a hobby, and when Earl returned home in 1944 he found the family car parked on the driveway, and the garage filled with clay and the tools and equipment of his wife's avocation.

He was interested in Alice's clay

handiwork, and his knowledge of chemistry enabled him to work with her in improving the quality of her products. She was creating new designs and finding a ready market for them. A few months later she received an order for 12,000 pairs of salt and pepper shakers of a Chinese design she had perfected—and that was the beginning of Sims Ceramics as a commercial enterprise.

They decided their future lay in clay products, and Earl gave up his job. They opened a studio in Pasadena for the production of both original designs and contract items for jobbers and wholesalers.

It was a going business from the start, but Earl's health was causing them concern, and when their doctor recommended that her husband get away from the smog zone and go to a dry climate, Alice was the one who made the decision to seek a location on the desert.

They traveled the Southwest from Tucson to Albuquerque seeking a field that seemed to offer a good opportunity for their ceramics industry. They felt there would be some advantage in locating near one of the tourist meccas.

Their friends and customers, Zeke and Frances Cornia of the Buffalo Trading Post in Apple Valley, California, urged them to locate in the new community on the Mojave Desert. The high desert climate was just what they were seeking for health reasons, and the spacious planning of the Apple Valley townsite appealed to them. There was one drawback — but that was solved the day Earl revisited the Buffalo Trading Post and saw workmen excavating trenches for a natural gas line into the town. Natural gas provides the most economical heat for firing pottery, and when the Sims' were assured this fuel would be available they bought a building site and began the construction of a factory-salesroom on the main street of town. Since then they have had to enlarge the original building to meet the increasing demand for their products.

Recently I visited their plant and was impressed by the quality and the beauty of the ceramic products being created almost entirely by hand craftsmen. Earl and Alice trained a majority of their workers themselves.

Since suitable clay has not yet been



Top—Richard Robertson mixes and pours the clay at the Sims factory.

Center — Betty Patterson paints a corn dancer design on an ash tray.

Bottom—Isabell O'Donnell uses an airbrush to decorate a plate.



Katchina salt and pepper shakers of Sims design.

found in the Mojave desert area, their material is a combination of talc from Death Valley, clay from Kentucky, and ground and processed feldspar obtained through commercial channels.

These ingredients with certain added chemicals, are mixed, aged, strained and poured into molds. After the clay has set, the molds are removed and the articles trimmed and sponged, and sent to the kilns for hardening. Then they are decorated by airbrush or hand art, or both, given a glaze coat, and returned to the kilns for final firing.

Approximately half of their output is contract work for jobbers who furnish their own designs. The other half is work of their own design for their own trade. They make frequent trips to the Indian country of Arizona and New Mexico to study the designs developed by Indian craftsmen over many centuries of work in ceramics. They are especially fond of the symbolic figures of the Mimbres tribesmen, now extinct or integrated with the

pueblo Indians of today. The pottery found by archeologists in the Mimbres Valley of New Mexico shows an unusual degree of animation in its design.

While the Sims' use their own artistic interpretations of popular Indian symbols, the thunderbird, katchina, squash blossom, corn dancer, sun shield, etc., they do not compete with the Indians in the field of pottery making. Rather, they have perfected a distinctive line of their own manufacture for home services and decoration — dinnerware, ash trays, salt and pepper shakers, informal service, butter dishes and accessory items. Earl spends much time in his laboratory working on formulas for better quality or more distinctive coloring. For instance, he ran 1005 tests before arriving at the exact shade of turquoise used as background in some of their products.

The Sims' are not drawing-board artists. Rather, they visualize the finished product they want to create, and then employ professional artists and clay modelers to work out the

details of design and color. They are both retailers and wholesalers, but most of their products go to art, gift and curio shops throughout the West on a wholesale basis.

In building a thriving business of their own, they have had to learn many lessons the hard way. For instance, the Indian thunderbird design is so widely used for decorative purposes that Earl did not consider it important to secure a copyright on the particular design he and Alice had created. They were quite chagrined then, to find on the market only a few months ago an almost identical item marked "Made in Japan." Evidently an importer had sent some of the Sims ceramic pieces to Japan and contracted to have them duplicated at a much lower cost than is possible under the American wage scale.

For a time the competition of the foreign-made merchandise cut deeply into their market. However, Sims Ceramics are the product of many years of research as to chemical content and coloring, and the superiority of their patterns is obvious when compared with the Japanese-made articles. Gradually they have been regaining their markets, and when I visited their plant huge floor trucks loaded with newly molded clay products were being rolled into the kilns for firing, and over in another part of the plant the women who process and hand paint the newly fired products were working full time to meet the demand for Sims Ceramics.

Earl and Alice have developed in their high desert community an industry of which the townspeople are very proud, and justly so, for the products from here find their way into many homes—and have a utility and beauty which reflect the finest in American craftsmanship.

Home of Sims Ceramics in Apple Valley.



LONE FAWNS IN WOODS ARE VERY RARELY "LOST"

You'd better think twice before giving in to that urge to "protect" an "orphaned" fawn.

There are two good reasons for not picking up the deer:

(1) The animal is not an orphan and is not lost. Usually the mother is in hiding nearby, and the fawns are not at the mercy of their natural enemies since they have practically no scent which would attract predators.

(2) You stand a good chance of being fined up to \$500 for having a spotted fawn in your possession.

Each year many well-meaning but misinformed persons find fawns in the woods and bring them home.—*Mojave Desert News*

Gem Trails in Arizona's Whitlocks...

The open land holds many rewards for the weekend explorer. Here is the account of a field trip made into an eroded range in southeastern Arizona—where gem stones were collected, and the early evidences of ancient Indians and pioneer cattlemen investigated.

By FENTON TAYLOR
Photographs by the author
Map by Norton Allen

OUR PURPOSE in making the expedition to southeastern Arizona's Whitlock Mountains one day last February was threefold:

Darvil McBride, in whose pickup we made the trip, was anxious for us to see a crude deeply-buried cement pipe which he felt might have been laid down centuries ago by Indian inhabitants of this country;

Rex Layton, another expedition member, wanted to show us what he called "the original Arizona flour mills," a hillside covered with basalt outcrops containing two score or more Indian grinding holes; and

We wanted to inspect a promising collecting area for rockhounds.

Early morning found us driving east on Highway 70 from Safford, passing the village of Solomon, the State Inspection Station at Gripe, and climbing the rolling foothills of the Peloncillo Mountains at the eastern end of the Gila Valley.

The paved road shot an arrow-straight course for the purple outlines of the mountains over which towered the distant pyramid of Ash Peak.

Watching the right side of the road, we found our first turnoff three and a half miles from the junction of Highways 70 and 666. White posts in the highway fence framed the cattle guard marking the ranch road. We rattled over the guard rails and rolled over hills made bright green with evenly-spaced creosote bushes, well-nourished from abundant winter rains.

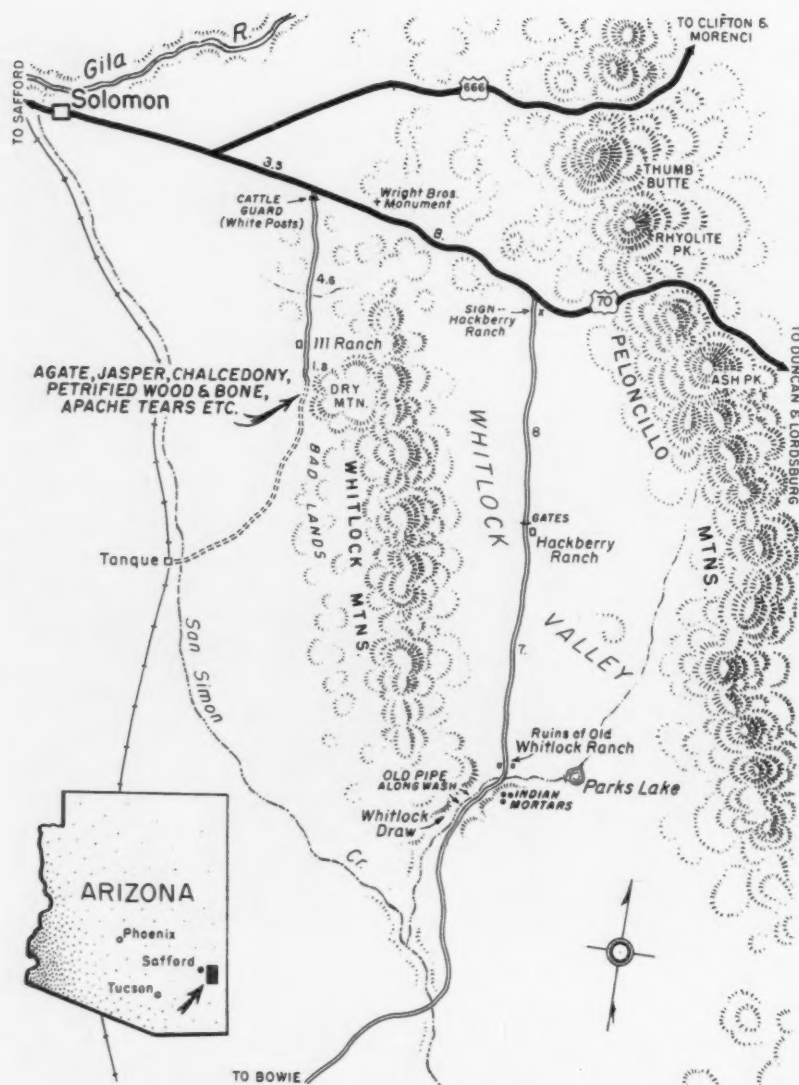
We sped across the rolling hills and



TOP—Whitlock Cienaga Ranch buildings. Adobe house once had a fort-like second story for protection against Indian raids.

CENTER—Darvil McBride and Rex Layton display some of the sandstone concretions collected on the west slopes of the Whitlocks.

BOTTOM—Author's children, Edith and Melvin, discover agate and chalcedony specimens in the Whitlock badlands.



jounced down into mesquite-clad draws and washes, until we came to the gray buildings and idle windmill of the 111 Ranch, a part of the Ellsworth Cattle Company of Safford.

No one lives at the ranch nowadays. The wooden house, with lean-to on both sides, presented jagged windows and sagging screen doors. A few other buildings were in complete disrepair, and the big tin-roofed barn was empty.

This ranch was established in the northeastern end of San Simon Valley by W. J. Parks in 1896. It encompasses the area immediately west of the Whitlock Mountains, a chain of humps and sharp peaks that parallel the Peloncillo Mountain range, further east, for about 40 miles. A spur of the Whitlocks—Dry Mountain—juts its badlands to within a mile of the ranch buildings. This was our first destination—the gem field.

Beyond the cluttered yard we closed the gate behind us, dropped down the slope, and crossed a wash beyond which lay the feeding yards. A few tawny Brahma and red Hereford steer watched us as we followed the faint tracks of a road leading toward Dry Mountain.

Eons ago a lake covered this area, and sedimentary deposits were built up layer upon layer, entrapping animals and plants. When the water receded, erosion went to work, cutting the formations into countless hillocks and knolls. The line of barren hills, showing white, yellow and blue pastel colors, stretch for miles along the Whitlocks.

The road ruts took us past bedraggled mesquite, sage and creosote bushes—their stunted growth a sharp contrast to the plants we had seen

nearer the highway, betraying a fierce fight for existence in a harsh land.

The road to Dry Mountain affords fairly smooth going, a trail any sedan, with careful driving, can cover. Beyond this point the seldom-used road is rough, sandy and washed-out, calling for slow travel even in a pickup.

As we climbed over a rise between two hills, Rex shouted for a stop. He had spotted unusual sandstone concretions covering a slope. They resembled groups of golf balls cemented together in a lumpy interesting series of designs.

Scouting ahead I found a clay bank in which Nature had carved a theater. A row of clay actors occupied the stage in silent tableau. This caught the children's fancy, and for awhile they stood around it, speculating imaginatively on the drama in progress.

My search in these hills revealed widely scattered agate and chalcedony float in a wide assortment of forms and colors. I picked up fortification agate almost immediately. Then I found some nice chalcedony roses, carnelian chalcedony, and one piece of especially fine fire agate. One agate showed flecks of green moss, and a nodule of red jasper contained the distinct imprint of a crinoid stalk.

Much of the material in this area is just the thing for tumbling, I decided. One cream-colored pebble was decorated with a thick sprinkle of blue dots.

Gazing around, I came to the conclusion that here in the shadow of the Whitlocks was at least 30 square miles of good rock hunting territory.

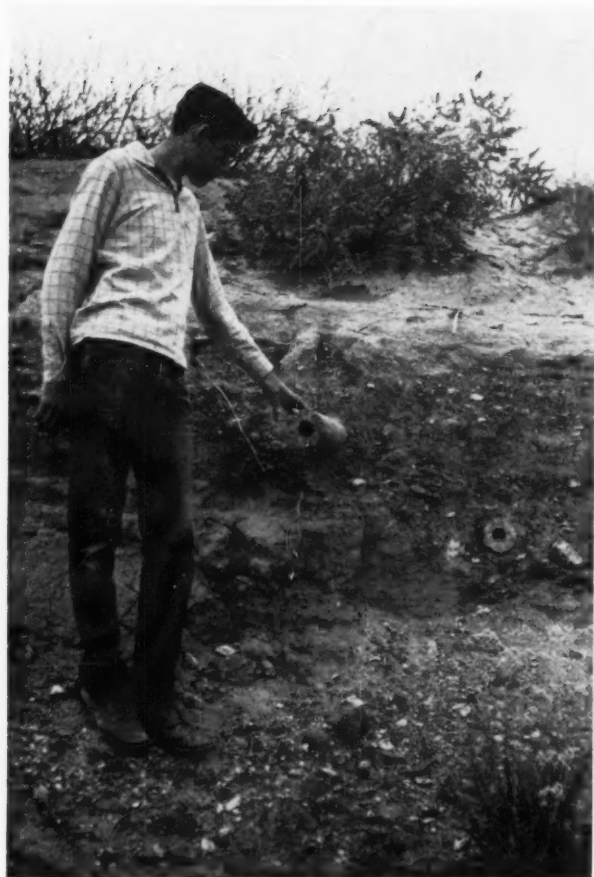
Since all the material is float, gem collecting here is much like participating in a carnival fishpond—a person will never know for sure what his next try might yield.

We drove further south and uncovered some petrified wood and bone in the side of a slightly yellowish mound. The bone was porous, and the wood was white and gray. I learned later that one man had uncovered a complete tusk in this area.

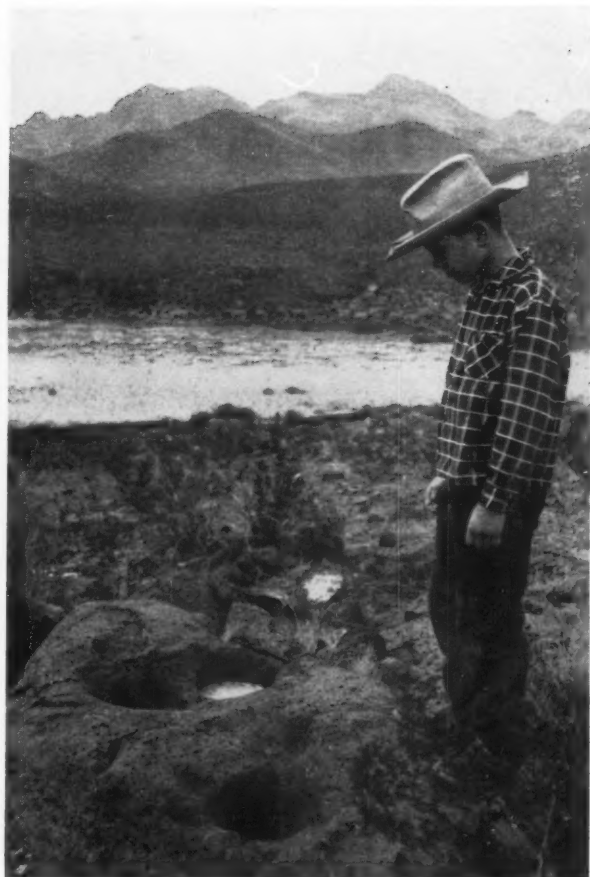
After lunch we drove back to Highway 70, and continued east once more. The paved way wound up between rounded peaks and buttes. After eight miles we could look down the valley between the Whitlocks and the Peloncillos. A sign reading "Hackberry Ranch—8 Miles," indicated our second turnoff to the right that day, and soon we were humming along a well-traveled ranch road.

We dropped into the valley, and came to the inhabited Hackberry Ranch, completely encircled by fence. Since the road went through the yard, we had two gates to open and close.

Yellow grass waved across the valley and stained the mountain slopes



Terry Taylor stands by two pipes which protrude from the exposed wash wall.



Robert Layton examines a basalt boulder containing Indian grinding holes.

to add brightness to their deep blue color. Mourning doves soared into whistling flight ahead of our approach down the entire length of the road.

Captain Whitlock left his name on many landmarks in this area, as did many fellow Army officers in the West. His forces pursued a band of cattle-stealing Apaches to the southern end of the valley. In the battle which ensued, the soldiers killed over 40 braves, winning a decisive victory.

This action stamped the Captain's name on Whitlock Mountains, Whitlock Peak, Whitlock Valley, Whitlock Draw and Whitlock Cienaga.

Our second destination of the day was the place where the mountains pinch in to form the draw. In a group of straggly trees at the head of Whitlock Draw and right next to the cienaga (Spanish: "marsh" or "swamp"), stand the ruins of the old adobe house marking the location of the former Whitlock Cienaga Cattle Ranch.

This ranch was begun in 1861, a few hundred yards from the scene of the Army's victory over the Apaches. William Charles located the spring at

the cienaga and founded the ranch. He sold it in 1882 to O. R. Smythe, who stocked the range with Mexican cattle.

Skeletons were still scattered over the battle site, and during Smythe's first roundup two of his hands collected the bleached skulls and adorned the corral poles with them as a joke.

When riders brought the cattle in, the herd shied and refused to enter. Smythe rode up to ascertain the trouble, and found himself facing a circle of grinning skulls. After laughing with the boys at the joke, he issued orders for the burial of the grisly decorations.

Frank Richardson bought the ranch, and sold it to W. John Parks in 1894. Two years later, Parks gave it to his sons, Jim and John, and moved to the west side of the Whitlock range to establish the 111 Ranch.

The Parks boys put down a well about two miles east of the ranch house, and tapped a water supply so hot that it had to cool before the cattle were able to drink it. Jim built a dam across the end of Whitlock Valley to

store the water. This reservoir is known as Parks Lake. In 1954 it overflowed, sending a head of water down Whitlock Draw which cut a deep channel and uncovered the pipe we had come to inspect.

We stopped before the decaying adobe ranch house, built by Smythe, which has stoutly withstood the ravages of time. Three rooms are on the ground floor, but the second story—a fort-like 16-square-foot room lined with port-holes—has melted away.

The "original flour mills" are located in the black lava boulders outcropping along the crown of the long hill immediately behind the house. Patches of hedgehog and prickly pear cactus frequently forced us to detour through the creosote bushes as we ascended the hill. Chips of flint and clear obsidian disclosed ancient workshop locations, and we also found a few scattered chalcedony roses.

Near the summit we came to the round grinding holes in the dark gray rock. These cavities were still half-full of rain water from recent storms. No pestles were in sight. From one



Robert Layton and Melvin Taylor speculate on the drama in progress in this natural theater complete with actors in tableau.

point I counted over 20 of these mortars. An industrious people had occupied this area at one time.

Walking along the deep wash in the white bottom of Whitlock Draw below, Darvil was on his way to the pipe when I started down the hill after him. I

crossed the floor of the draw, literally covered with pottery shards of plain and fancy colors, and joined him and Terry Taylor in the bottom of the wash.

A few steps down the sandy bottom we came upon a short section of the

pipe. It was about six inches in diameter, with a one-inch hole through its center. As we continued on, we found lengths of the pipe barely uncovered, and we could trace its course for a short distance before we came to a place where it had washed out completely.

Who had laid the pipe? Settlers or Indians? We speculated on its probable origin.

"It looks to me," said Darvil, "as if a trench had been dug the exact size of the pipe. The cement, or whatever they used, could have been poured into the trench, and as soon as it set up hard enough, a sharp pointed spear was pulled through its center to make the hole. Look how lopsided the hole is in this section."

So fascinated were we that little attention was paid to the dark clouds gradually blotting out the western sky. We followed the pipe for half a mile or more, finding one spot where it was 15 feet below the surface of the ground.

William R. Ridgeway of Safford has done some research on the pipe. He contacted members of the Parks family who had lived in this area for years. They had no knowledge of the pipe. Chemical analysis revealed no portland cement in the pipe. It was made from a volcanic material, pozzolana.

We carried on our exploration with the enthusiasm of discoverers. Pipe fragments are strewn all along the wash floor. We searched and we speculated, but the mystery of the pipe's origin is no nearer solution. Perhaps someone will come forward with the answer to this riddle some day.

My attention was caught by a yellow dust plume rising above the San Simon flats. The day had been warm, though overcast, and now signs of a quick change of weather were evident.

We hurried to the pickup. Stray breezes began to whistle through the brush, then the heavy wind hit with a blast of sand and dust. Gray wisps of clouds began to dangle over the hills and to reach for the surrounding peaks. We secured the tent hood over the truck bed as the first drops of rain spattered down.

The storm was good to us. It merely sprinkled as we hurried past the section of road that would be slick in a rain; but as soon as we reached the pavement, the storm pulled out all the stoppers.

We were pleased with the outing. The prospects of a vast collecting area was a worthwhile reward, and it will be excuse enough to make many more trips into the Whitlocks.

Cash For Desert Photographs . . .

October on the desert is a pleasant time—summer's heat is past, winter's cold lies ahead. And it is an excellent month for picture taking. The desert scenes you record in October—or any month—are welcomed entries in Desert's photography contest.

Entries for the October contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than October 18. Winning prints will appear in the December issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5. For non-winning pictures accepted for publication \$3 each will be paid.

HERE ARE THE RULES

- 1—Prints must be black and white, 5x7 or larger, on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—Entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine

PALM DESERT, CALIFORNIA



The Morrows of Oro Grande. From left, Harry, 77; Roy, 85; Jim, 83; and Raymond Victor "Penny," 72. Roy and Jim discovered and briefly worked the Slocum Mountain turquoise mine in 1898.

Lost Morrow Turquoise Mine

Here is a lost mine tale as told by the men who found the mine—worked it—abandoned it—and when turquoise grew increasingly precious, made several attempts to relocate it. But, they have never been able to go back to it—and so it remains there, somewhere in the Mojave hills, awaiting a younger generation of prospectors.

By EUGENE L. CONROTTO

TIME, ARTHRITIS and a desire "not to carry that danged turquoise mine tale to our graves," resulted in the disclosure of a 60-year-old secret by the Morrow brothers of Oro Grande, California.

The Morrows, Roy, 85; Jim, 83; Harry, 77; and Raymond Victor "Penny," 72; have made several unsuccessful attempts during these six decades to relocate a Mojave Desert turquoise mine the two eldest brothers, Roy and Jim, discovered in 1898. After working the mine for four weeks, they abandoned it because "turquoise was no account in them days!"

The mine's locale is on the west slope of Slocum Mountain, 26 miles east and slightly south of Randsburg, and 30 miles north and slightly west of Barstow. The Mountain is in the Morrow Mining District, named after the brothers' father, Newton Lamar-

tine Morrow, who came to California from Missouri in 1857. He was an early judge and recorder in San Bernardino County.

Today the area in which the mine was discovered lies along the southern border of the U.S. Naval Ordnance Test Station's B-Range—an exceedingly dangerous high explosive detonation ground. Persons desiring to enter this land must first obtain permission from the Security Office at N.O.T.S. at China Lake, California. Each case will be analyzed separately, and will be subject to daily changes in security attitudes, the Navy reported. This procedure has been established to protect the lives of persons who might be interested in entering this dangerous area.

John Barry, publisher of the *Victor Press* in Victorville, was the first person to whom the Morrows related their

story, and it was John who kindly told me about the colorful Mojave pioneers and their lost bonanza.

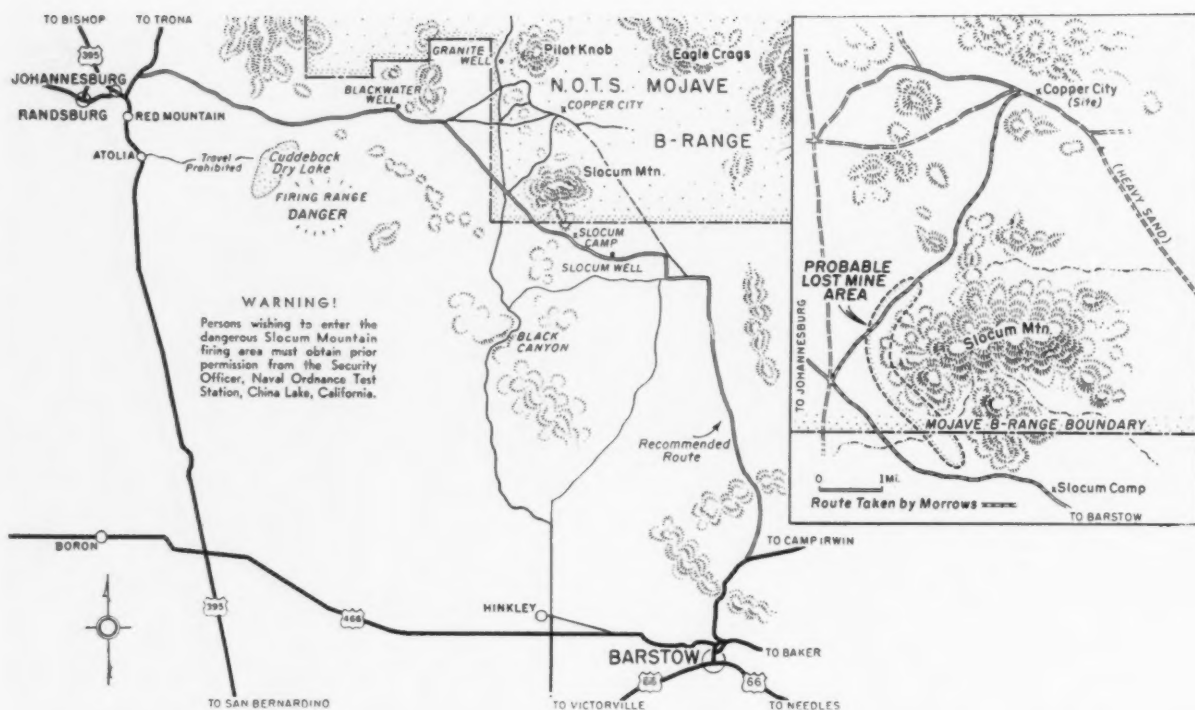
I dropped in on the Morrows on a warm day in April. Roy and Jim were enjoying the sun, each sitting in front of one of the two small bungalows on the property. These houses are behind the Oro Grande business block Harry and Penny own.

A neat lawn, nodding shade trees and a long view across grassy fields to the jumble of vegetation marking the course of the Mojave River, give the Morrow yard a pleasant and relaxed atmosphere.

Penny recently retired after being in business for 50 years in this community. He was Oro Grande's first barber. He owned the old mining town's first automobile, and the community's first phone was installed in his home. For many years he was Oro Grande's only peace officer.

While Penny was in business, his three brothers were mining and ranching in this general vicinity. "Roy here dug every hole in this country," explained Penny with a laugh.

Penny cooks and cleans house for



Jim, while Harry does the same for Roy. All the brothers are bachelors.

"We were working in Copper City, a good camp a couple of miles north of Slocum Mountain, when we made that Turquoise strike," recalled Roy. "Jim and I were riding by this low ridge on the west slope of the mountain when we spot this outcrop."

"It was eye-level. We dug in about 10 feet under this ledge and blasted another five. All we found were these big turquoise nuggets, but very little copper."

"Turquoise was no account," said Harry.

"It was positively no account," Roy agreed. There was a long silence as his mind returned to Copper City in 1898, then he rose and slowly hobbled across the lawn to take a seat in the shade of a faded canvas umbrella near where his partner in this long-ago episode, Jim, was seated.

"Jimmy," Roy said, "remember how them Indians grabbed up all our turquoise samples?"

Jim chuckled with the memory. "Only the Indians and maybe a cowboy now and then had use for that stuff," he said.

"Yes, there were plenty of Indians in this country then," Roy continued. "They wore lots of this turquoise jewelry. And like Jim said, some of the boys liked it too, for saddle and bridle ornaments."

"Well, we worked this ledge for three-four weeks, hauled all this turquoise out, and when we saw it wasn't

going to pay, we left it. We wanted copper—not turquoise."

"We never did tell the story before, because we wanted to find it again," commented Jim.

"We've tried off and on during all these years. Every time turquoise climbed in market value, we'd try harder—but we couldn't find Jim and Roy's mine." This time it was Harry who spoke. "It's a tough lay-out," he added.

"Yes," agreed Roy, "it's a tough lay-out. When we went back the last time—three years ago—we couldn't even find traces of the other old workings near the turquoise mine. In fact, we couldn't find the old tin cans that would have marked the Slocum Camp at the south tip of that mountain."

"The thing to find is that old wagon trail from Slocum Camp to Copper City we were on when we spotted that outcrop—but that is gone too. Seems to me the mine was in low hills, kind of at the bottom," said Jim. "Boy, the Indians went hog-wild with those rocks!"

Harry jumped to his feet and took my arm. "That's the boy that will get you there," he said with enthusiasm, pointing to my jeep parked in the dusty roadway. "There's five miles of country and 10,000 gulches on the west side of Slocum Mountain to be covered. It's a hard lay-out to find. A fellow has to go in with a jeep and say to himself: 'I'm going to stay in there a week and I'll find it.'"

"Did you boys ever think of flying

over the flank of that mountain?" I asked.

"They wanted to take me over in a flying machine," said Penny, "but, heck, you couldn't find it that way. From the air that hill would look like a dried-up prune."

"You're right, Pen," said Roy. "What's happened is that the tunnel Jim and me dug has been covered with sand, or an earthquake has shook it closed. That's the only thing I can figure. Still, seems like the mouth of that hole would be visible yet. It's low down on the flank."

"The whole country looks like it has changed, but probably it's my memory that has done the changing. Nearest I can remember exactly is that Jim and I were five miles south of Copper City when we found that ledge."

Copper City, the boom town that lured the Morrows into this area, was the scene of a high grade copper discovery in the late 1890s. About 1000 persons worked the ore for a brief time, but the smelters were too far away to make it profitable to mine low grade. When the high grade ore was gone, the miners scattered. The camp was situated at the base of Pilot Knob, the principal landmark in this vast desert territory. Only rubble remains at the Copper City site.

A dirt road from Blackwater Well to the so-called Barstow Road cuts across the southern corner of the B-Range, and is the most accessible route to the lost mine area. It roughly fol-

lows the same trail the Morrows took on their discovery trip.

The road from Atolia leading eastward toward Slocum Mountain is impassable due to the military firing range below Cuddeback Dry Lake. The trail from Granite Well to Seabergs Well east of Slocum is not passable for standard cars and heavy sands there give four-wheel-drive jeeps trouble. It should be emphasized that this area can only be entered with permission of the military. Water can be found at Granite Well and Blackwater Well.

The B-Range, which has been largely leased land, and territory immediately south of it is included in the Navy's latest land expansion attempt. Total area involved is 180,000 acres. San Bernardino County officials are vigorously protesting the proposed land grab, as is the San Bernardino County Museum Association. Black and Inscription canyons, included in the area, were described by the museum group as among the most rewarding for prehistoric man study on the Mojave Desert. These canyons are part of the proposed Black Canyon State Park.

The Navy claims it needs to extend its boundaries of the B-Range, where guided missiles are being tested, to insure against rockets straying beyond limits of the bombing area.

My conversation with the Morrows drifted to other mines, tenderfeet who couldn't understand how anyone could lose something as big as a mine, and a half-dozen related topics. Finally it settled on Oro Grande's colorful past.

"How long have you lived in this mining town?" I asked Roy.

"Golly, boy, I've always been here! I grew up with the hills!" he answered. This brought a delightful round of laughter from his brothers.

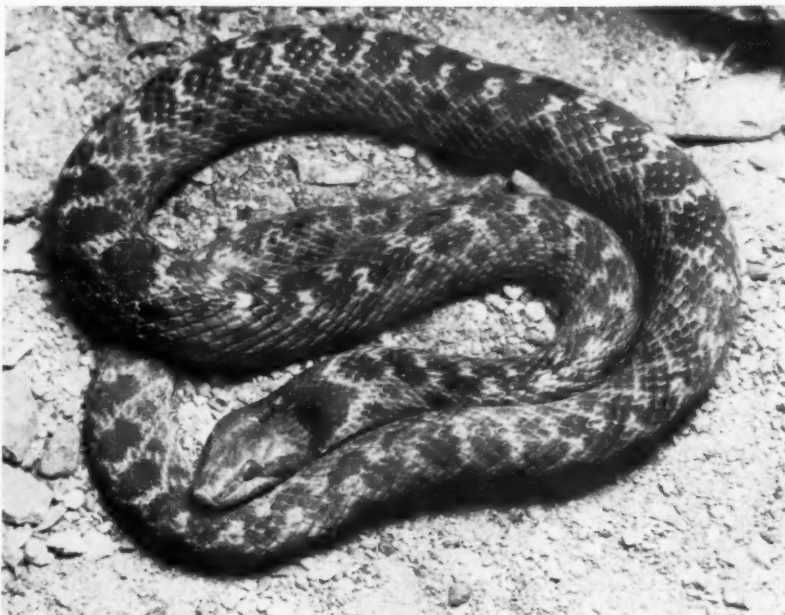
They were silent for a long time after that, poking their canes in the grass as they savored Roy's remark. Finally, Penny spoke up.

"About that turquoise mine," he said, "it's a good one. Turquoise is more valuable than silver today. We'd be looking for it yet if we could get out there, but you go ahead and print the story because now we never will find it. Next time you come to Oro Grande we'll all be up at the cemetery."

The brothers laughed even harder at Penny's closing statement.

"Up at the cemetery," repeated Roy with a chuckle. "And that danged turquoise mine won't be on our minds no more!"

The Spotted Night Snake



Spotted night snake likes rocky situations where it hunts its lizard prey. It is very gentle and can be handled with ease. Brownish spots on a yellow-gray ground color make up its markings.

By GEORGE M. BRADT

THE SPOTTED NIGHT snake (*Hypsiglena ochrorhyncha*) is of interest because of its saliva which apparently has slightly poisonous properties, probably used to help it catch its lizard diet. It is a short stocky species which, though infrequently encountered, ranges from the Northwest southward into California, Arizona, and Baja California. Its vertical pupils indicate that it is nocturnal—diurnal species have round pupils.

Snakes can focus their eyes for various distances, and have very good vision, though probably only for relatively near objects. While their eyes have no lids, protection is afforded by a transparent scale. This means, of course, that a snake must sleep with its eyes open.

In addition to sight, the sense of smell is well developed in snakes. Touch, however, is more or less limited, and taste and hearing are totally lacking. A snake can neither hear its own rattling or hissing, nor the voice of man or beast. They are advised of the presence of any enemy through ground vibrations perceived through the body. Neither can a snake taste its food, but this is not surprising in an animal that swallows its prey whole.

The *Crotalidae* or pit vipers, a family of very venomous snakes including rattlers, copperheads, water moccasins and fer-de-lances characterized by the hollow or pit between eye and nostril, have an additional sense—an amazing ability to know direction and distance of objects whose temperature is higher than the rest of the surroundings. Thus the high-temperature differential-receptor (the pit) is very valuable to creatures living largely on warm-blooded prey.

Because of their scaly skin, snakes are far less sensitive to touch than other animals. Were it not for their delicate tongues their sense of touch would be considered underdeveloped. This valuable organ is a feeler which tells the snake about the ground it traverses. A snake depends upon its sense of smell perhaps as much as upon vision. It literally smells its way through life. Its principal olfactory aid is its bifurcated flicking tongue. While itself not an organ of smell, its forked tips pick up tiny particles and carry them to two little sensitive cell-lined pits or Jacobson's organ located in front of the roof of the snake's mouth. It is closely associated with the smelling areas in the nose.



Gambel's Quail, also called Desert Quail

By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum
Sketches by Morris Van Dame

SOME YEARS AGO I stopped at a ranch set far back in a cozy canyon of the foothills of southern Arizona. Appropriately it was named Tierra de Dios (God's country). Its owner told me how he had befriended a flock of Gambel's Quail, allowing them to feed with his domestic fowl. Each evening and morning he said they came out from among the surrounding low shrubs and rocks, drifting in gradually, always with due caution but never without constant medley of soft friendly notes. When evening came, I too, heard them, first far out, then at points nearer and nearer. First a few males, proudly displaying their beautiful rudderlike crests, came forth and gave notes of assurance that all was well. This en-

ticed the other members of the flock to the place of feeding.

Soon my rancher friend went to a small shed and came forth with a pan of wheat. The demeanor of the birds was immediately one of great expectancy and eagerness. When the grain was strewn, the original number of birds was augmented by dozens more. They seemed to be coming in from everywhere, and soon there must have been more than 200 of the gorgeous trim bodied birds all scurrying about like mechanical toys among the barnyard chickens, who now too were coming in from many places to be on hand to share in the evening feast.

What a sight it was! Said rancher Jones, "I've had the pleasurable company of these quail for several years now. Every bird seems to know that I am its good friend and trusts me implicitly. Come this March and they will be off in the mesquite bush, mating, laying eggs—they lay up to 15 or

The desert has its own species of quail — one of many varieties found all around the world. It is a friendly, trusting bird where it finds human kindness — but also very cautious because it has learned that mankind is more often enemy than friend.

Friendly Birds of the Brush

20, you know — and hatching their young. And then proud plumed males and hens along with their fuzzy speckled young will shortly thereafter be here again enjoying my hospitality. Choice guests they are, every one of them, and I tell you right now I'd no more let anyone come in on my ranch and shoot one of those little boarders than I'd think of letting them raise a gun on my children! No sir, I'd never betray that wonderful trust they have in me. The companionship I have with all those handsome birds is one of the very greatest things in my life. I used to be a great quail hunter but since I've had this experience with these birds, I can never hunt quail again."

Among this handsome lot of Gambel's Quail I noticed a bobtailed midget quail only about seven inches long — a rather "busier than usual little fellow" and of quite different appearance. It was livelier than the other birds in making its way around among the hens and cockerels.

"Oh, that's my little Coturnix," said Jones. "It's the common European Quail. A friend of mine sent it to me with five others from Italy. This is the only one of the lot that survived the long journey. It is a hen. I am so proud and fond of her. I do wish I could get hold of a male so I could raise birds of this kind too."

It is a common belief that Gambel's Quail require water every day. Those of us who travel widely over the desert wastelands know well enough that these hardy birds are quite often found far from any possible source of water and that they get along quite well with only berries of the leafless mistletoe, occasional bits of green vegetation and

insects as their source of fluids. Indeed, they drink at the water holes if they can, but certainly they are not as dependent on free water as most other quail are. Of course the coveys are much more frequent in country with springs than out on the waterless scrub-desert.

The chicks of Gambel's Quail like those of all quail are precocious little things, running about as soon as they break from the egg but not "with half shells on their backs" as some have said.

"In a few days," said the eminent ornithologist, Dr. Elliott Coues, "they become very nimble and so expert in hiding that it is difficult either to see

wings well, they prefer to run and hide, or squat where they may be when alarmed. If then forced up, the young covey flies off, without separating, a little distance, often realighting on the lower limbs of trees or in bushes, rather than on the ground."

In the western borders of its range in California, Gambel's Quail are found in Upper Sonoran arid mountain borders where pinyons and desert juniper share the landscape with agaves and creosote bushes. There is often quite a mingling of this bird with the larger handsome long-plumed Mountain Quail (*Oreortyx plumifera*). At times even a third partridge, the closely related California Valley Quail (*Lophor-*

not only this quail but also a goose (*Anser gambeli*), the handsome song sparrow (*Zonotrichia gambeli*), the mountain chickadee (*Penthestes gambeli*) and a shrike (*Lanius ludovicianus gambeli*) of California, Baja California and western Mexico.

Many years ago when I had the rare pleasure of camping near a spring on the north slopes of the Santa Rosa Mountains with the naturalist Dr. Joseph Grinnell, he called to my attention one morning a female Gambel's Quail with twelve of her half grown young; and feeding with her were eight grown Valley Quail. He said he had been watching such a common flocking together of the two species in sum-



Mearns' Quail



Scaled Quail, or Cottontop

or catch them. When the mother bird is surprised with her young brood, she gives a sharp warning cry, that is well understood to mean danger, and then generally flies a little distance to some concealed spot where she crouches, anxiously watching. The fledglings, by an instinct instantly scatter in all directions, and squat to hide as soon as they think they have found a safe place, remaining motionless until the reassuring notes of the mother call them together again. Then they huddle close around her, and she carefully leads them off to some other spot for greater security. As long as they require the parent's attention they keep close together and are averse to flying. Even after becoming able to use their

tyx californica), may add its clear flute-like notes to those of the other two birds.

The name Gambel's Quail was given in deference to the brilliant but short-lived young Philadelphian, William Gambel (1819-49), who as protege of the ornithologist, Thomas Nuttall, became one of America's early transcontinental travelers, assiduous collector and writer on birds, particularly California birds. He died along the Sacramento River of typhoid fever in his thirtieth year while trying to cross to the High Sierra. Unfortunately a flood later swept over the site of his grave and today we have no knowledge of the exact place of his demise or burial. In Gambel's honor was named

mer in a number of other places; also that he had seen matings between the two kinds of quail with resulting hybridization.

In the arid chaparral covered areas, in dry washes and mesquite bordered arroyos of the Rio Grande Valley of Texas, in southeastern Colorado, southward into New Mexico, southeastern Arizona and along the Mexican Plateau to the Valley of Mexico is found the Scaled Quail (*Callipepla squamata*), so called because the bluish gray plumage, particularly of the underparts, simulates in its markings imbricated scales or tiles. Other appropriate names are Cottontop because of the soft, trim, white-tipped,

tufted crest of this delicately colored bird, and Blue Quail.

This species is a heavy seed-eater, particularly of the small seeds of weeds. This food habit makes us evaluate it along with the mourning dove as a most valuable bird-citizen, worthy of protection at all times. Moreover, it is a great and exemplary devourer of insects, one-fourth of its diet consisting of them. It eats also green grass blades, berries and cactus fruits which may, in part, be a substitute for water. Like Gambel's Quail, with which it oftentimes consorts, the Scaled Quail is sometimes found up to seven and eight miles from water; but they make very regular visits to water if it is available.

These are remarkably vigilant and shy birds and I know from experience, most excellent dodgers. They seem always to be on the alert and prefer running to flight, dodging in and out among the vegetation as Dr. Arthur C. Bent says "like so many rabbits off to the nearest brier patch. They are soon lost to sight for they can run faster than we can and will not flush."

It is not without a certain feeling of dejection that I write about that most beautiful and bizarre appearing of our

quail, Mearns' Partridge (*Cyrtonyx montezumae mearnsi*) once proud denizen of the higher grassland deserts and lower open pine forests of New Mexico, central Arizona and northern Sonora. If not now extinct in its wild habitat it is almost so. Its gentle and confiding ways, its affectionate disposition, unsophistication and lack of suspicion of modern man's atavistic avidity to kill for sport has been its downfall. It earned the name of Fool Quail because it is so easy to kill, even with clubs.

This is a fairly large sized bird (length nine inches) with unusual contrasting markings especially on the head. The males are strikingly streaked above with black, reddish and yellowish brown; below they are red and gray. The wings are marked with round black spots, and the flanks, which are almost black, are in contrast attractively spotted with white. The plainer females have in addition bars of lavender above and areas of lavender brown below. The beak is stout and the strange harlequin-patterned head is surmounted by a soft crest of feathers which on occasion can be spread laterally.

Mearns' Quail is a ground nester.

Unlike most species it often makes a concealed nest entrance, partially arching it over with grasses.

Dr. Edgar Alexander Mearns (1856-1916) in whose honor this bird was named was a member of the United States-Mexican Boundary Survey (1891-1894) and later (1907) author of *A Report on the Mammals of the Mexican Boundary of the United States*. He traveled widely over the southwestern deserts gathering interesting notes and specimens of natural history and ethnology. During his work on the boundary line about 30,000 specimens of plants and animals were collected and transmitted to the U.S. National Museum. These illustrated the changes in the animals and plants in the various faunal areas through which the expedition passed. Fifty or more new species of animals and plants have been named in Dr. Mearns' honor as well as three genera, a rather unusual distinction. It is said that his active love of natural history began when as a boy of three his father presented him with a large illustrated book of birds. His mother spent many hours teaching him the bird names and histories as he avidly looked at the pictures.

The fine clear flute-like notes of all the American quail are always most appealing and once heard, unforgettable. The notes of the proud males are especially noteworthy. How many are the spring mornings when I've been awakened by the penetrating mating call of the Gambel cock "Yuk-kae-ja, yuk-kae-ja," the alarm note, a sharp discordant "craer, craer," or the assembling cry, "qua-el, qua-el" often followed by the rapidly uttered contented "quoit." So pleasing too is the lengthened "chip-churr, chip-churr" of the Scaled Quail.

From the great variety of these cries and pleasing conversational notes, their many knowing gestures and behavior when faced with unusual situations, we must account quail among the most intelligent of birds. They are indeed capable of mental activities of a very high order. Moreover, they show unusual appreciation of kindness and will reward us with their great confidence if given opportunity. How unfortunate that this fine bird must suffer so often at the hands of human predators and that so frequently they are killed by gunners, or wounded and left to perish in the misery of hunger, thirst and pain. It is quite possible that most of our least prolific and hardy species of quail may yet "be completely annihilated under the grinding hob-nailed hoof of so-called civilized man."

Hard Rock Shorty of Death Valley



"The road up the Cyclone Pass?" echoed Hard Rock Shorty in answer to the usual tourist question. "Sure, it's a good road — maybe a mite rough but 's long as yu got a top on that station wagon they ain't no danger of yu bouncin' out.

"Better'n some roads I've seen in my time," Shorty added in reminiscence.

"Now you take that road me an' Pisgah built up Eight Ball crick to that sulphur claim we staked out back in the 'nineties. Why that road would jar the tail feathers off'n a road runner.

"Yu see we cleared the road by pryin' the boulders outa that conglomerate in the floor of the canyon. But nearly every rock was buried deeper'n it showed, and when we got through the

holes wuz worse than the bumps 'd been.

"Well we didn't want t' give up a road we'd put so much work on, so we hauled our supplies over it till the burros got so they could jump like jackrabbits. They wuz other bad features too. The canned beans that bounced in over that trail got to jumpin' and never stopped. When we opened a can we had to knock 'em down with fly-swatters.

"But we finally had t' give it up. Pisgah Bill balked. That was the day he was haulin' a 300-pound anvil up to the mine in the buckboard. He hit an extra big hole and the anvil bounced up and killed a buzzard flyin' overhead. The bird landed on Bill's new 10-gallon hat an' sorta made a mess of it. He ain't been over that road since."

Gambel's Quail

One of the Southwest's favorite inhabitants is the Gambel's Quail. Many persons who live in rural areas delight in a nightly ritual of watching these birds dash in to feed on scraps left out for them. The Nature article by Dr. Edmund C. Jaeger in this issue features these and other desert quail.

John F. Kahle, M.D., of Flagstaff took this first prize photograph of a male Gambel's quail with a Linhof Super Technica 4x5 camera on Super Pan Press Type B film; exposed with 200 WS Synctron Electronic Flash with extension head at f. 22 with 150 mm. Schneider Xenar lens.



Pictures of the Month



The Mitten...

Through the years the great volcanic core in the background of the second award photograph, and companion formations in colorful Monument Valley have become symbols of the Desert Southwest — along with the Saguaro and Joshua trees, bleached skulls and defiant cacti.

The Mitten was photographed by Charles Bodenstein of Santa Monica, California. Camera data: Leica III-F camera with Summaron 35 mm. wide-angle lens; 1/500 sec. at f. 11; Plus X film; K-2 yellow filter.



MOJAVE SOLITUDE

By HELENA RIDGWAY STONE
South Pasadena, California

In an immensity of sun and sky,
Through endless gray-green desert solitude,
Past mountains, mesa, canyon walls scaled
high,
The train drones on. While I, in pensive
mood
Drink in this beauty with each changing
glance.

Here is a landscape quite as it was made:
No subdivision mars its wide expanse,
Nor tall skyscrapers cast their angled shade.
Yet, in this grandeur I can feel a throb
Of longing, for my city and its mob.

KINSHIP

By FLORETTA BARNARD VANDERBILT
Claremont, California

I stand upon my mother, Earth
And gaze at Cousin Hill;
For dust I am, and kin to these
Each rock, each mountain rill!

Perhaps that's why I feel so lost
Upon a city street
Where man-made canyon walls rear tall
My joy to quench, my spirit cheat.

But here upon the desert floor,
So close to Earth beloved,
I hold re-union with my soul
Commune with God above!

Photograph by Lloyd Williams

SKY VIEW

By GRACE R. BALLARD
Santa Barbara, California

There's a crack in my wall
Where a star shines through;
And a tiny patch of sky;
While the winds of heaven
Find entrance there when the storm
Clouds hasten by.

Let me be unaware
Of the crack in the wall—
May my vision focus far;
That cognizant of eternal Truth,
I see but the sky—
And the Star.

Freedom

By TANYA SOUTH

No man loves freedom more
than I.
Yet can I honestly deny
The other fellow any rights
That I may live unto my lights?
True freedom, to be really such,
Must mean no trampling and no
crutch.

Beauty's Vigil

By BUTLER STERLING HARKINS
Oxnard, California

Out of your ancient swirls, Oh Fallen One,
Grained pinyons trail upon a waveless sea,
Where brimming rivers beneath a thirsty
sun
Once swept in channels of curved majesty;
Where lava spewed from cinder-cones of
fire,
Young mountains buckled, riven clouds were
flung,
Quenching cycads and the dinosaur's desire
While earth up-bulged and jagged faults
up-sprung.

Yet Beauty reigned, and hope within her
grew
That One would recognize her great design,
Would worship art as if He also knew
The form which tempts the soul is, too,
divine.
Oh Fallen One, Darkness still precedes the
dawn
But man awakes, to contemplate a swan.

ONE DESERT NIGHT

By ALICE RICHARDS SALISBURY
Barstow, California

The night about us sighed and stirred
With furtive desert life that lay
Within the quivering dark; we heard
Coyotes faint and far-away;
From milling herd came drowsy lows;
An owl boomed out an echoing call.
Remote and black, the mountains rose
Like ramparts of the Chinese wall;
A tang of sage, the warmth of sand
Long-drenched in sun, up-drifted light
About us. Hand in answering hand,
Our pulses rhymed with pulsing night
The while we lingered, mute, intense,
Until the moon at full should swim
Majestic, tawny-orange, immense,
From up behind the mountain's rim!

TRY GOD'S COUNTRY

By HAROLD PATCH
Perkinsville, Vermont

Oh where can I go to escape the rush;
And the ceaseless wear and tear;
And the daily strife of a city life
That is rubbing my raw nerves bare?

Come out in the country that God has
made,
Where the mountains, wave on wave,
Keep the watch at night o'er your campfire
bright,
And bring you the peace you crave.

Or perchance, if the desert calls you,
Explore its spaces deep;
Where the coyote's song through the eve-
ning long
Will lullaby you to sleep.

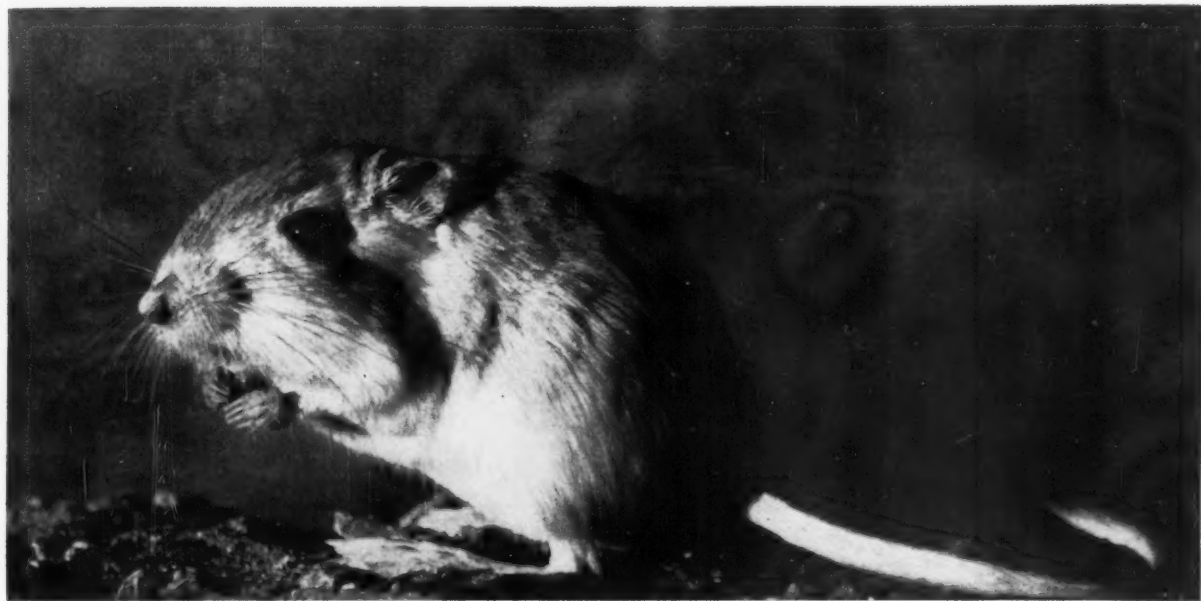
DESERT MOODS

By HELEN M. GILBERT
Santa Ana, California

I have known the desert at dawning.
A wilderness stark and bold,
Stood humbled by the splendor of sunrise—
A vision in pearl and gold.

I have known its heat at noon-day,
Its scorching, whipping sand
That beckoned with withered fingers
To death in a desolate land.

And once, on a moon-drenched sand dune,
I found beauty, shimmering white,
Enfolded in delicate petals—
A primrose blooming at night.



Mr. Packer—who protects his home with cactus spines. Photo by Harold Weight.

LIFE ON THE DESERT

Cactus Spines for Survival . . .

Mother Nature put the spines on the cactus to insure its survival in a land where thirsty rodents would like to have access to its water supply. But those vicious thorns also contribute to the survival of at least one species of the rodent family. For Nature students here is an interesting lesson in ecology.

By W. I. LIVELY

MY CABIN was built on a hillside. The rear of the building rested on the ground, while the front was elevated on boulders to a height of two feet or more. Without realizing it, I had created a pack rat paradise.

I had barely finished building and moved in, when scampering sounds under the floor made me wonder if another tenant had taken possession of the basement. Lying on the ground and peering under the floor joists, I saw a pile of cholla cactus spines and ironwood twigs. From a runway under the debris, a pair of bright eyes regarded me boldly, as if to say, "Well, what are you going to do about it?" There wasn't much I could do, even if I had wanted to, which I did not. I was more interested in studying my tenants than in evicting them.

By quietly watching them I discovered that there were at least a pair of them. They were very much alike, except that the male was larger than the female. The missus was shy and

retiring, the more so perhaps from the fact that a family seemed to be in the offing. They were a fawn color on the back and sides, shading to a very light gray, almost white, underneath. Their fur was fine and silky, fastidiously brushed and groomed.

They were miniature replicas of a kangaroo, which accounts for their common name of kangaroo rat. Their front legs were short, while the rear ones were long and powerful. Their mode of locomotion was not by running, but by short hops and long leaps. I have seen the male leap six or eight feet while running, and rise two feet straight up in the air from a standing start.

The long tail ended in a tuft of silky fur, much longer on the male than the female. This seemed to be their point of vanity, for they were very assiduous in grooming it, using paws, teeth and tongue in the process. The male, especially, seemed to take pride in flaunting this beauty tuft, expending on it the care and vanity that the male

of the human species bestows on his mustache.

I marvelled at the rapidity with which the pile of cactus spines grew. One morning I glanced through the window and caught the male in the act of adding to the store. The cholla cactus grows a main stalk from three to six feet in height, then branches out in a series of loosely jointed tufts, from as large as a golf ball to the size of a tea cup. These nodules are covered with exceedingly sharp spines. When these enter the flesh, the outer fibers curl back, forming a fish hook effect when they are pulled out. Needless to say, the pulling out process is very painful.

When mature, these spiny nodules detach themselves and fall to the ground, take root and form other plants. Many times, from lack of moisture, or proper contact with the soil, they fail to take root, and dry up and blow away. In this condition, they are the kangaroo rat's treasure trove.

On this occasion I watched my tenant recover one of these tufts. He carefully worked his snout in among the spines until he had attained a secure grip. He then raised the tuft from the ground, keeping his head turned sideways to give him a clear view of his path, and carried it, with

short careful leaps, to his home under the floor. From that time he bore the name of "Packer," and he surely lived up to it.

There seemed to be but one opening into the mass of rubbish. This was a burrow just deep enough in the dirt to allow passage beneath the spines. I am sure that farther back this burrow branched into a number of runs. It was only when Packer was outside that I could see this doorway. When he went into his den, he carefully shut the door by filling the opening with spines. He never omitted the door closing.

Packer, himself, was not immune to the needle sharp spines. One day as he was carrying a cactus joint his hold slipped and the nodule turned and attached itself to his shoulder. He

calmly sat down and with his teeth carefully extracted several individual spines which had pulled loose from the nodule. Looking at him through binoculars, I saw flecks of blood on his coat. He licked the punctures, smoothed his coat, then secured a new hold on the nodule and carried it away.

One day I heard squeakings and scurryings in the runway beneath the mound. When I investigated, I discovered that Mr. and Mrs. Packer now had a family of children. Packer, who had always been industrious, now became an over-worked family man. The young were not allowed outside the mound until they were nearly half grown. It was up to Packer to carry food to them. I dropped scraps of food for his convenience, and he grate-

fully accepted them. He soon became so tame that he would come within a few feet of me to pick them up. He knew me personally, too, for he would not come near when outsiders were there. He loved all kinds of fruit and vegetable seeds, even stripping the weed seed for yards around the house. A bread crust would set his tail plume waving with joy. He would hunt out grapefruit rinds, where I had thrown them, and sit and chew on the hard dry peel for minutes at a time. I could not tell whether he did it for sustenance or to groom his teeth. He was not above filching carrots, potatoes and other vegetables, if they were left within his reach, while the peelings were thankfully received and eaten or carried to his family.

Packer and his kind are known generally as trade rats, from the belief that when they carry away some object that takes their fancy, they always leave something in its place to pay for it. My experience with Packer and his family, especially his family, made me appreciate this belief. Those youngsters were inveterate thieves. Packer would sometimes pick up bits of glass or bright pieces of metal to carry into his den. If he found a bit of food along his way, however, he would drop the trinket and pick up the tidbit instead. For some reason he never seemed to return for the discarded articles. I decided that when he, or one of his family, took something and left something in its place, it was not done from any altruistic principle of leaving value received, but simply because the new found article was more attractive than the one he had been carrying. Since he could not carry both, he took the more desirable one and left the other.

I soon learned to keep small articles out of their reach. One of them, however—he must have been the black sheep of the family—insisted on coming into the cabin to find his loot. It was summer and as I had no screens, I could not well shut the door to keep him out. He would wait till I settled down to sleep. Then he would come hippety-hop up the steps and through the doorway. He made no attempt at stealth. He would scamper about the floor in a series of short quick jumps, so rapid they seemed to blend into one continuous movement.

He would explore every inch of the floor, searching for something that appealed to him. Once I peeked over the side of the bed and caught him staring at the cook stove. To this day I wonder if he was trying to figure out some way to take it apart and salvage it. I know for certain that he attempted to get away with the stove-poker. Finding nothing on the floor,

TRUE OR FALSE:

For those studious-minded folks who like to check up on themselves occasionally, just to see

how much they really know, *Desert Magazine* presents another of its True or False tests. The questions cover many fields of interest—geography, history, botany, mineralogy, Indian customs and the general lore of the desert country. A good desert rat should answer at least 15 of these correctly. A grade of 18 or more is superior. Answers are on page 34.

- 1—Desert mirages are seen only in summertime. True..... False.....
- 2—Blossom plumes of the salt cedar are yellow. True..... False.....
- 3—Nuts of the pinyon tree grow in cones. True..... False.....
- 4—Rainbow Bridge National Monument is in Arizona. True..... False.....
- 5—There are 36 sections of land in a township. True..... False.....
- 6—Best route from the desert to the top of Mt. Whitney is the Bright Angel Trail. True..... False.....
- 7—Death Valley was given its name by Death Valley Scotty. True..... False.....
- 8—Fruit of the wild grapes found in desert canyons are not poisonous. True..... False.....
- 9—The state flower of Arizona is the Saguaro Cactus. True..... False.....
- 10—Indian sand paintings are made with a brush of yucca fibers. True..... False.....
- 11—A gopher snake will coil and strike like a rattler. True..... False.....
- 12—The junction of the Green and Colorado Rivers is in Utah. True..... False.....
- 13—Tallest peak seen from anywhere on the California desert is San Geronio. True..... False.....
- 14—Calcite often was used by the Indians for making arrow and spear points. True..... False.....
- 15—To visit Meteor Crater in northern Arizona one would travel on Highway 66. True..... False.....
- 16—The Hopi Indians carry live rattlesnakes in their annual Snake Dances. True..... False.....
- 17—Carlsbad Caverns are in Arizona. True..... False.....
- 18—The Apaches are known as pueblo Indians. True..... False.....
- 19—Jackrabbit homesteaders can gain title to their land without actual residence on the acreage. True..... False.....
- 20—Dates grown on the American desert mature in the fall of the year. True..... False.....

he would turn his attention to the table. It was so constructed that he could not climb to the top, but that did not worry him long. He found a way to shin up the wall to a window ledge, and leap from there to the table top. He would then select some article, preferably a knife, fork or spoon, drag it to the edge of the table, drop it to the floor, then leap down and drag it out the door and down the steps, unless I gave chase and frightened him into dropping it. I could not move the table, for the cabin was so small that there was no other place for it. I fitted a board in the doorway. That delayed him just long enough for him to scamper up and over it. Not only that, but he dragged any article he could carry with him. He must have been a graduate of the second story fraternity.

Like all evildoers, Pesty, as I soon named him, came to a bad end. He was a night prowler, spending most of the day sleeping. That was where our destinies crossed, for I preferred to sleep at night. I often wondered why only one of the family became a cabin prowler. With all his faith in me, Packer was too canny to enter the cabin. No doubt he tried to instill the same caution in his family. Probably Pesty, the reckless one of the flock, felt capable of taking care of himself without advice from his Old Man. At any rate I feel sure what he did was done without Packer's approval.

One night when Pesty had annoyed me beyond endurance, I slipped from bed, slammed the door and grabbed the broom, determined to give him a scare that he would remember. I lit the lamp and we started a merry go round about the cabin floor. Hunting a place to hide, and no doubt blinded by the light, he leaped straight into the broom as I flourished it. I felt very guilty as I picked up his lifeless form. I enjoyed the quiet nights afterward, but I felt sad about killing him, even accidentally. I confess I missed him, despite his pesty ways.

The summer drew on to its peak. Suddenly I was visited by an epidemic of rattlesnakes. I killed one under a tree in the yard. I found another coiled beside the doorstep. I was puzzled, for I had not seen many in that locality before. The puzzle was solved when I came home one evening and heard one under the floor, with his rattles tuned to a high pitch. When I dragged him out with a garden rake, he looked more like a porcupine than a rattlesnake.

Evidently he had tried to crawl into Packer's runway, with the idea of having young rat for dinner, and had tangled with the cholla burrs. Mad-



Cholla — most vicious of all the desert cacti. It sheds its lower spine-covered joints as it gains height. Some of them take root and become new cactus stalks while others are carried away by Kangaroo rats, also known as Pack rats, to make their homes snake-proof.

dened by the spines, he had thrashed around and accumulated more and more of them. I laid down on the ground to peer under the floor. A box standing against the wall was in my way. I pushed it aside, and there, within a foot of my face was another rattler. He was lying motionless, testing the air with his tongue. I froze. It was a war of nerves, and I knew I couldn't last very long. Just as I was reaching the breaking point, with a last flick of his tongue, he uncoiled and crawled under the floor. I did

not try to kill him. I was grateful that he had retreated and hoped he would not get punctured with thorns as his mate had.

With so many snakes around, no doubt some of Packer's family fell victim to their appetite for young rat, but I am betting that not one was ever taken from the den under the cactus spines.

Packer apparently knew there were other enemies on the prowl for him and his family. I had been hearing queer calls at night, a combination of a bark, a cough and a grunt. I knew it was not a fox, for I was well acquainted with their chattering bark. It was some animal entirely new to me.

One night I came home late, and heard the same weird call from close at hand. After a search I determined that it was coming from under the cabin. Using my flashlight, I discovered the owner of the unearthly noises. Apparently it had attempted to force its way into or under the cactus mound, and had annexed a few spines in the attempt. Trying to get rid of the spines, it had acquired more. It had gone round the vicious circle until it resembled a porcupine.

In mercy to the trespasser, there was but one thing to do. I shot the suffering animal and with a long pole dragged it from under the floor. Next day I described it to a friend who was well versed in the fauna of the region. He gave me an instant answer. It was a Ring Tailed Cat.

For weeks, almost every night, I heard its mate circling the cabin and calling in plaintive tones. Apparently it was wiser or more cautious, for it never attempted to explore the dangerous area under the floor. I wondered then, and still wonder why an animal born and bred on the desert, and naturally well acquainted with cholla cactus, could have been tempted to risk their deadly spines in such an ill advised foray.

Afterward I became well acquainted with the ring tail tribe. I never ceased to wonder at the strange conglomeration of other animal characteristics combined in this animal. Also I never stopped trying to classify their weird call, but it always remained something peculiar to itself; a cross between a bark, a cough and a grunt.

All this time Packer went about his business of hunting food and cactus spines, as if nothing else in the world mattered. At times there was a peculiar twinkle in his eye, as if he were pleased to think I shared with him the secret of the defense of his castle. I fancy that while his enemies were trying to breach its gates, he was sitting in his runway, chuckling.



Warren E. Rollins of Santa Fe—still active at 97.

Zuni Sun Symbol. Every detail has symbolic significance.

Venerable Painter of Santa Fe

He has painted everything from billboards to wall murals in his 80 years of active work as an artist—but he prefers the West, and especially its colorful landscapes and the tribesmen of its pueblos as his subjects. Here is the story of the dean among Santa Fe's artists.

By W. THETFORD LeVINNESS
Photographs by Kenneth W. Shaw

LOFTY MESAS, deep arroyos, varicolored bluffs, and the scanty plant life of arid plains appear in much of the painting of Warren E. Rollins, grand old man of Southwestern artists, now in his 97th year.

"I am quite in love with desert material," says Rollins, who still paints an average of six hours a day. An arch-conservative who has never deviated from realism in his canvases, he encourages others to use the desert as subject matter. "It has so much to offer in natural variation that it lends itself least to distortion," he says.

This venerable painter, who always looks as though he'd just stepped out of an ornate Victorian picture frame,

has a studio in Santa Fe, four blocks from New Mexico's Territorial-style capitol. He becomes a little restless puttering about in winter, but has great fun doing outdoor stints when the weather is warm. Small of stature, with a full growth of snow-white hair and beard, he has been a familiar figure throughout the West for generations.

Rollins' entire career has been that of an artist. He was born in Carson City, Nevada, August 8, 1861, a continent away from the Civil War then raging in the East. Many of his ancestors were New England seafaring men, some the captains of sailing vessels that plied the north Atlantic. When

he was eight, he made a chalk drawing on slate which impressed his mother. "From that time on, I've been an artist," he says jovially. "She encouraged me to paint, and it wasn't long before I was studying the old masters."

He attended the San Francisco School of Design, where he studied under its director, Virgil Williams. Upon graduation he won the Avery gold medal for excellence in painting. Later, when the school became the Mark Hopkins Institute of Art, Rollins was named assistant director.

His classes were popular, and at 27 he married. The girl was 18; she had come from Missouri to visit relatives on the Coast. They had two daughters, and for several years Rollins spent his time teaching—and painting.

The sea was in his blood and it emerged in his earliest canvases. He did the ships of many flags that came full-sail into San Francisco harbor. He climbed atop an island lighthouse off

the California coast to do his sweeping seascapes. He soon grew tired, however, of class-room regimentation and hankered for the wide open spaces. He desired to work in many parts of the West, so he gathered up his growing family and began his years of itinerant painting.

The West in those days was rough on gents who didn't make their living holding up stage-coaches; for an artist with a family, even a subsistence diet was a luxury. But Rollins was a disciple of Rembrandt, and a flare he had for the *genre* soon paid off. He got his first commissions painting the portraits of tough *hombres* and their women in saloons and dance halls of the period.

"Likely as not they'd offer to pay in drinks instead of dollars," Rollins recalls. Brought up to shun even the smell of a cork, he goes on: "I'd always been told that the devil himself could be seen in a whisky bottle—if you gulped the contents first!"

It's after such words of wisdom as these that he'll often wax into his favorite recollection of these early days in the saloons. "It was in Billings,

Montana, and Calamity Jane had just come to town," he says. "The moment I saw her I wanted to do her portrait, but it seems that the saloon-keeper tipped her off to the fact that I was a teetotaler. Deciding to have a bit of fun, she said, 'I'll sit for the portrait on one condition—that you match me drink for drink while you're painting it.' I thought for a moment and said, 'It's a deal!' I waited till she'd made the rounds of all the tables and was pretty much under the influence, and then I told her I was ready. I asked her to come over to a table that happened to be near a large spittoon, and ordered two drinks. She drank hers and I poured mine in the spittoon, and ordered two more. This went on for a couple of hours and she never caught on to why I was constantly dropping my brushes on the floor and leaning over with my whisky glass in my hand to pick 'em up. Calamity Jane's portrait turned out to be one of my best and I didn't let her bring calamity to me!"

But portrait painting wasn't enough, and some of Rollins' work at this time was, by necessity, non-creative. All

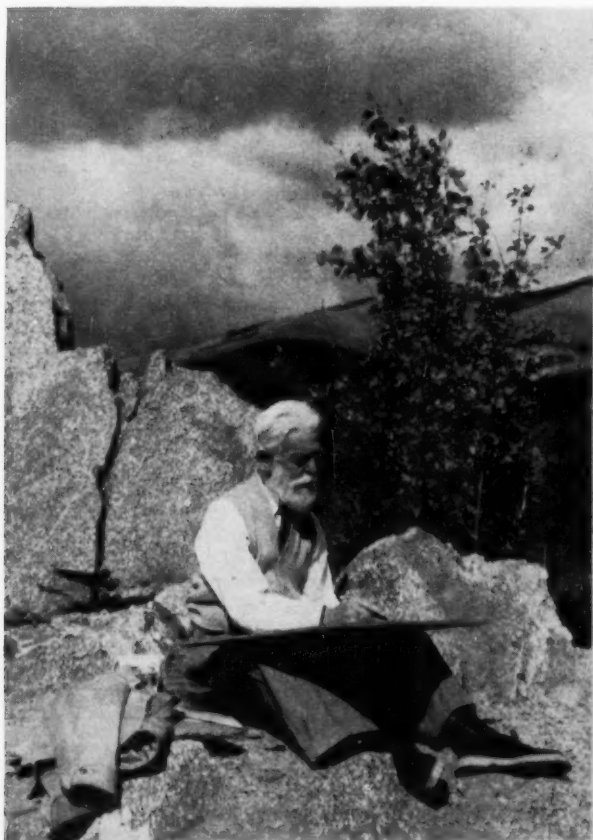
through the gay nineties and a part of the decade that followed he could be seen from the Dakotas to New Mexico, from Kansas to California, painting billboards and the railroads' rolling stock to support himself and his wife and children.

"Soon I began to furnish the designs too," he says with a twinkle. "It was before the days of big-time national advertising, and soap and tobacco companies and the like had their signs painted locally. They'd rent billboards and whole sides of freight cars and I'd think up appropriate illustrations. I painted enough soap-suds on box-cars to wash off the desert dust, and enough tobacco-pipe fumes to scorch the train!"

He was getting into more serious work all the time. Just around the turn of the century he spent a year in the Hopi Indian villages of northern Arizona—prehistoric cities that still survive on wind-swept desert tableland. He lived in the homes of Hopis, observing their rituals and absorbing as much of their culture as any non-Indian could. He did Hopi heads, and

The artist, despite his advanced years, still goes out into the desert at every opportunity to do landscapes in crayons.

Rollins' painting of the Indian Prayer Stone, with the sun symbol above and four stones representing Badger, Bear, Cougar and Wolf below.



portrayed the tribe's richest kachina dances—all in oil on canvas.

These paintings sold immediately, and museums vied to acquire them. Rollins devoted the next 30 years to the work among Southwestern Indians that made him famous.

He settled in Santa Fe long before any other prominent painter did, and is still considered the dean of the art colony there. He'd go for long excursions into the Navajo country, painting oil portraits of leading Navajos and doing landscapes by the dozens. The Santa Fe Railroad used his paintings on travel posters, and once, to assure him all-weather working conditions, built him a studio on the rim of the Grand Canyon. Several of his best Navajo canvases, done around 1910-12, found their way to Hubbell's trading post at Ganado, Arizona, where they still may be seen by Navajos and tourists who flock there.

Back in Santa Fe, Rollins did some very significant oils in the Pueblo tradition. Among them was "Grief," a painting which he has since considered his masterpiece. The subject—an Indian stricken at his dead wife's bier—is subordinate to the depth of feeling portrayed, one of resignation and of unity with the Infinite. This painting has long held a place of honor in the permanent collection of the Museum of New Mexico's art gallery in Santa Fe. Another oil which he executed at about the same time was a Hopi scene, "The Altar of the Gods."

Acclaimed by countless critics, Rollins was commissioned in 1915 to do a series of panels, using Indian subject matter, for the main dining room of a hotel near Santa Fe, called the Bishop's Lodge because it was built within a stone's throw of the residence of the late Rev. J. B. Lamy, first Roman Catholic archbishop of Santa Fe. The old residence is still standing, and Rollins' panels are still next door.

There are four panels in the series, and they cover whole wall-sections at the Bishop's Lodge. The largest, called "The Ceremonial Altar of the Zuni," measures 96"x84".

Painting these panels involved ladders and scaffolding too big for Rollins' studio. Dr. Edgar L. Hewett, director of the Museum of New Mexico, allowed him the use of a room for the project in Santa Fe's 300-year-old Palace of the Governors, then in the process of restoration as one of the outstanding examples of Spanish colonial architecture in the United States.

Early in the 1920s Rollins went to live at Chaco Canyon, where his son-in-law and daughter, Mr. and Mrs. Gus Griffin, had a trading post. Declared a national monument in 1906, Chaco Canyon is the site of some ex-

tensive Indian ruins. In the years between the two world wars, the Santa Fe Railroad conducted excursions there by bus from its nearest station at Thoreau, New Mexico.

Rollins remained for 14 years as resident artist. He sold several hundred paintings to tourists, anthropology students, and Park Service personnel—chiefly desertscapes and everyday scenes of the prehistoric Southwest. His work at this lonely settlement was the fulfillment of an ambition decades old; he brought to bear not only the vivid imagination which pervaded his earlier Indian work but a thoroughgoing knowledge of archeology as well.

"And at Chaco Canyon I learned to use crayon," Rollins says. "I like it because of its stability. It may be viewed from any angle, and there isn't any fading or cracking. It has all the carrying qualities of oil."

For the past 25 years he has used crayon exclusively. He calls the finished paintings "crayolas," and the technique is reminiscent of Seurat. He applies numerous colors separately, in smooth, translucent spread. By using coarse paper which catches the pigments only on its raised points, he can depict such delicate forms as clouds and sandstorms with surprising effect.

Rollins works on a regular schedule, from 8:30 a.m. to 4:30 p.m. daily, with a 2-hour rest at mid-day; he deviates from this plan only slightly when painting outdoors. He spent the years of World War II in Baltimore, at the home of his other daughter, Mrs. Frederick Phillip Stieff, Jr. When he was almost 90, and still with Mrs. Stieff and her husband, he utilized his early experience with seascapes to do an entire "crayola" series on the *Mayflower*—from a model of the famous vessel which he borrowed from the United States Naval Academy at Annapolis.

His present studio is in the home of Elizabeth Chatham, a Santa Fe schoolteacher. Miss Chatham is an accomplished painter, and has studied with Rollins for years. During vacations, they go out sketching together. At home, he loves to entertain, and people from all walks of life enjoy pouring over his current creations and hearing what he has to say about art.

Rollins has one pet fret: the modernists. Asked recently what he thought of them he exploded with the query: "Do you want me to swear?" More seriously, he says: "They are intelligent painters but I have no patience with their work; I cannot consider it art." He believes the subject-matter of a painting should be pleasing to live with, and blames "modernism" for the fact that contemporary work contains much that is not. "I'm glad

to do all I can against it," he says. "I would stand on my head if it would help."

As for his own future, that seems bright enough. He is in excellent health and is looking forward to a sketching trip to northern Arizona with Miss Chatham. They'll work at Chinle and Marble Canyon and visit Oraibi, oldest continuously inhabited village in the nation. Rollins has friends his own age at this 13th century pueblo of stone walls and beamed roof—Hopi *caciques* who seemed old when he met them, more than half a century ago.

THE *Desert* MAGAZINE CLOSE-UPS

"I was born 75 years ago on a cotton plantation in Southern Georgia where illiteracy was the rule. I had learned to read and write a little by the time I was 17—and then the education bug bit me. I worked evenings and weekends to help pay my way through college."

That is how Tex Reese of Perris, California, describes his early life. He is author of "New Shade Tree for the Desert" in this month's *Desert*.

He taught school for 10 years and then became a traveling salesman for horticultural concerns in the East. "This gave me a first hand opportunity to study botany—and I made the most of it. Now it's my life. My experimental work keeps me too busy to get sick, grow old or discouraged. I test odd trees and plants with the idea of improving their habits and appearance so they will be useful in new environments," commented Reese.

One of his most promising developments for the desert is the Tropical Pithecellobium, a beautiful evergreen shade tree which makes great spikes of colorful flowers followed by edible fruits. In 1925 he introduced the Reese Seedless Persimmon.

Reese's son, Lee, has been instrumental in his father's work, but his first love is machinery. At present he is machine shop manager on a 12,000-acre Kern County, California, farm.

* * *

Thomas B. Lesure of Phoenix, whose travel feature stories are well known to *Desert* readers, recently sold his sixth book in two-and-a-half years. His latest, "The Heart of the Southwest," is scheduled for publication in January. It deals with vacation and living aspects of Arizona, New Mexico, Nevada, Utah, Colorado and Texas.

LETTERS

A World to Share . . .

Santa Monica, California

Desert:

Editor Henderson quoted some observations on the virtues of solitude expressed by young poet-artist E. Ruess in the July *Desert*, and I'll agree Ruess had ample precedent set by such men as Moses, Buddha, Jesus and Mohammed. Still, I'm sure rescue agencies much prefer the buddy system.

Ruess specifically states that his trips to desert and mountain are not for the sake of companionship. I wonder if he saw anything wrong in going there for that purpose, to seek deliberately the society of those who join in respect and admiration for the marvels of Nature, to share the effort of endeavor and the thrill of attainment? An old German proverb states: "Sharing doubles pleasure, halves sorrow."

For many years I have gone my lonesome way, but recently joined the Sierra Club. What a wonderful difference! Buddies on the trail, the exchange of observations, expertly planned trips guided by skilled and devoted leaders! Let some choose the solitary sojourn; I'll take mine with congenial company.

BILL UTTERBACK

Hard Rock Shorty a Prevaricator?

Los Gatos, California

Desert:

Personally, I'm getting sort of fed up with Hard Rock Shorty who says he has lived in Death Valley for 50 years or so. The dang fool don't know nothing about hot weather. Guess he wan't around that day down at Baker when it got so hot the shells melted right off the backs of the desert tortoises. The thermometers were exploding like Chinese New Year firecrackers. My cow even gave pasteurized milk, and I crawled under a burning Joshua tree to cool off.

When I drilled my well out on Baldy Mesa I struck water at 610 feet. It was so hot it melted my diamond drill. When it cooled off a bit, I used asbestos buckets to carry it in. As for the hailstones he talks about, he ain't seen nothing. The hailstones down around the Sidewinder Mine are bigger'n doughnuts, and hit Ord Mountain so hot they burn holes in the lava.

You just tell this Hard Rock for me that he ain't seen nothing, and besides—I think he is a dang liar.

"BALDY" MESA DARRELL

The Barstow Monster . . .

El Monte, California

Desert:

Enclosed is a photograph of what is probably one of the so-called Barstow Monsters mentioned on page 32 of the August '58 *Desert*.

I made this picture on May 30, 1958, while my wife and I were looking for gem stones on the side of a mountain located 10 miles north of Barstow, California, on the Superior Valley Road.

We spotted two of these giant lizards. One ran for cover, but the one I photographed made no move. Actually it took 30 minutes to maneuver into position with my camera.

This reptile was about 14 inches long from snout to tip of tail, and about five or six inches around the belly. The tail was whitish yellow, legs black-blue, and head a bright blue color. His eyes were black beads, and the skin appeared scaly rather than beedy like a Gila Monster's. He had the appearance of a giant lizard, but certainly did not act like one—instead



The "Barstow Monster" is a harmless chuckawalla.

of running away, he seemed to be trying to get into position to attack.

I hope this serves to warn anyone out on desert trips that a new menace has appeared.

GEORGE M. HESS

Dear Mr. Hess — No warning is necessary, for the "Barstow Monster" is quite harmless. He is a chuckawalla—second largest species of lizard in the United States. The Gila Monster is the largest.—R.H.

Deformity of Lambs . . .

Covelo, California

Desert:

This letter refers to the item on page 34 of the August *Desert*: "Deformity of lambs born in certain areas of Idaho and Nevada, said to be due to an unknown poisonous weed . . ."

In 1945 I was employed by the U.S. Indian Service to study stock poisoning plants and grasses at Fort Hall Reservation in Idaho. That spring large flocks of sheep came through

from Utah where they had been grazing for some time.

Some of the ewes were sick, and this was laid to local plants—which was impossible for the damage had been done en route. The sheepmen came to the Agency for permits to cross the Reservation, and I inspected their sheep, and found quite a few deformed lambs.

Trailing up from Utah, the ewes came through greasewood, or "chico," growing on denuded soil, bearing succulent small leaves at that season. These leaves are salty, and the sheep crave salt. Any other forage which might have been eaten by the sheep to dilute the salt—companion plants to greasewood growing on seleniferous soils—also should be suspected.

Similar poisoning and deformities of lambs were seen at Pilot Butte, on the Wind River Reservation in Wyoming. At this time I did some work with Professor O. A. Beath of the University of Wyoming's Agricultural Experiment Station, chiefly by correspondence. At Pilot Butte, good plants such as alfalfa were contaminated by the soil, and became converter plants. Astragalus, greasewood and other plants create similar losses.

Controlled grazing is the secret to avoidance of trouble. Also, if sheep are salted and fed hay or other forage before being taken through hazardous areas, danger is lessened.

The foregoing is contained in my booklet, "Stockman's Pocket Book," still used as a text by agricultural colleges.

EDITH V. A. MURPHEY

When Rattlers Were Plentiful . . .

Monterey Park, California

Desert:

I wonder where Henry Wilson wandered for 35 years on the desert to see but two rattlesnakes (*Desert*, August, 1958)?

Certainly he missed the Beatty-Rhyolite-Bullfrog area in Southern Nevada where in May to July, 1905, while prospecting and surveying mining claims, we heard the snakes singing in the brush, and killed an average of one each day.

And Eldorado Canyon in Southern Nevada — where we were afraid to walk the trails and roads at night without a lantern. From the Tichatticup Mine to Duncan's Mine it was a half mile, and another mile to the town of Nelson—but this trail was an ordeal in 1914-15. One man, struck in the leg by a big rattler, was found in his cabin two days later. He was moved to Searchlight where he died the next day.

In Cliff Canyon in the New York

Mountains near Ivanpah, California, I killed an average of 10 rattlesnakes each year for six years. My wife shot one with a .38 revolver at the door of our cabin, and piled rocks on others to hold them until I returned from the mine.

In 1918 we took a three-day vacation at a tourist camp near Fort Huachuca in Southern Arizona after a year's work at the Sacramento shaft in Bisbee. The first evening we killed a big rattler after dark, so we could get into our cabin. It was right in front of our door. We were warned that the place was infested with rattlesnakes.

And who has not heard of the Sidewinder Mine in the Sidewinder Mountains 16 miles northeast of Victorville, California?

In the years 1904 to 1923 I killed about 100 rattlesnakes and sidewinders on the desert—give or take a half dozen.

JAMES F. FREEMAN

Dear Mr. Freeman — I guess you fellows in the early days must have killed off most of the rattlers, for in the 45 years I've been hiking and camping on the desert, I haven't seen an average of one rattler a year.—R.H.

Rattlesnake Rattle Dust . . .

Healdsburg, California

Desert:

While the bite of a rattlesnake is very poisonous, the rattles have a kind of dust on them that is poisonous to the eyes. Don't save any of those rattles.

A man put rattlesnake rattles in his fiddle, got the dust from them in his eyes, and went blind. Don't take any chances with rattlesnakes at all. I have seen far too many of them in my 89 years.

G. L. GROVER

Dear Mr. Grover — I'm afraid we can't go along with you in this matter. Laurence M. Klauber writes in his authoritative book, Rattlesnakes, that this myth stems from the old and untrue belief that rattles are a poisonous instrument. This theory was denied as early as 1681 by N. Grew, and according to Klauber has received little serious consideration since, although he feels it still is widespread. Some people have attempted to soothe and pacify teething children by allowing them to chew on rattlesnake rattles — with no ill effect. It also is interesting to note that the common practice of placing rattles in fiddles was done so in the hope of improving the instrument's tone, keeping out dampness, or giving the owner good luck.—R.H.

Here and There on the Desert . . .

ARIZONA

Hopis File Land Suit . . .

PHOENIX—Hopi Tribal Chairman Willard Sekiestewa filed a suit in U.S. District Court seeking title to 2,472,-216 acres set aside in 1882 for use of the tribe and other Indians. The Navajos, whose reservation surrounds the Hopis', also are claiming rights in the original tract. President Eisenhower recently signed a bill opening a way for settlement of the boundary argument through a panel of three Federal judges.—*Phoenix Gazette*

Indian Road Improvements . . .

WASHINGTON, D.C. — Congress approved a \$20,000,000 Navajo-Hopi road bill which provides for improvement of Routes 1 and 3 across the reservations, bringing them up to secondary highway standards. The improvement would give good road access to the Four Corners area. — *Phoenix Gazette*

Tribesmen Work for Wages . . .

TUCSON — The changing role of Arizona Indians—from farmer to wage worker—is noted in the University of Arizona Agricultural Extension Service's new Circular 263. Most of the income derived by the state's 78,000 Indians now is from temporary or permanent jobs off the reservation, rather than major dependence upon subsistence agriculture as in the past. Indians continue to hold, and to attempt to work, uneconomic land units, and one of the most serious problems facing both Indians and non-Indians in the state, the circular points out, is what will eventually happen to these Indians, and what use they will eventually make of their reservation lands.

Navajo Education Progress Told . . .

WINDOW ROCK — G. Warren Spaulding, superintendent of the Navajo Agency, announced that all six-year-old Navajo children are expected to be enrolled in some type of school during this school year. Early approval was expected for the construction of a 175-pupil public high school building and 10 additional elementary classrooms at Tuba City. The Sanders Public School is expected to accommodate 200 to 300 additional Navajo students this fall through extensions of the school bus routes in the vicinities of Wide Ruins, Pine Springs and Manuelito. Spaulding also reported that the Navajo Tribe has taken over costs of law enforcement personnel for the reservation, for which \$768,-766 was budgeted for fiscal year 1958.

Prehistoric Link Sought . . .

COOLIDGE — Archeologists are searching for the answer to a prehistoric question: did the ancient people who built a metropolis in northern Mexico also build the four-story 40-foot-high building that is now the Casa Grande National Monument? Amerind Foundation has been given permission to excavate ancient Casas Grandes near Chihuahua, Mexico, where it hopes to establish a link between the American Southwest cultures and that of northern Mexico.—*Phoenix Gazette*

CALIFORNIA

Blue Cut Road Rejected . . .

TWENTYNINE PALMS—The National Park Service reaffirmed its opposition to the controversial Blue Cut Canyon road or any alternate canyon road opening onto the Coachella Valley from the Joshua Tree National Monument road system. The Park Service said it has made a thorough review of its 1955 decision not to include the Blue Cut road and various alternates in the Monument road system.—*Indio News*

Marines Want More Land . . .

TWENTYNINE PALMS—The Marine Corps is seeking 592,394 acres of land for expansion of its Training Center at Twentynine Palms. The land lies northwest of the base, and has been the center of controversy in years past. About 500,000 acres of this tract are in the public domain, the remainder controlled by about 100 persons. Part of the area has been used by the Marines as a bombing range on a rental basis. Residents of the area have protested the proposed withdrawal of lands from public use in this desert recreation region. — *Mining Journal*

Burro Count Ordered . . .

BISHOP — Following repeated reports that feral burros of Inyo and San Bernardino counties are being taken without permission and killed for dog food, State Fish and Game Department wardens have begun an extensive aerial and ground survey to determine the herd population. At the same time increased patrol activities were ordered. The last census, taken several years ago, showed 2500 to 3000 animals in the area. Three separate arrests have been made during the past year involving the illegal taking of burros.—*Nevada State Journal*

Land Claimed for Indians . . .

BLYTHE — California is disputing Federal claims that Indians hold 7785 acres along the Colorado River, part of it in the Palo Verde Irrigation District in Riverside County. The land issue is corollary to the protracted Colorado River Suit. The Federal Government, defending Indian and other Federal reservation rights to the water, says a boundary line set in 1876 put the disputed land within the Colorado River Indian Reservation. But the river shifted eastward since the old survey point was established, and the land has long been in the possession of private owners. — *Salt Lake Tribune*

Cruise Sets 500 Boat Limit . . .

BLYTHE — Directors of the Fifth Annual Colorado River Boat Cruise announced a 500-boat limit for the October 11-12 affair. Stricter requirements also are planned in an attempt to eliminate some of the troubles encountered when an armada of 500 small boats assaults the Colorado. Enough gasoline to make a one-way trip will be mandatory, and underpowered craft will be banned. From Blythe the boatmen will travel to Martinez Lake, make an overnight stop at the Yuma Test Station, and the next day return upstream to Chamber Landing. — *Palo Verde Valley Times*

Glamis Road Completed . . .

GLAMIS — The 30-mile county highway linking Brawley in the Imperial Valley with Glamis has been completed. At Glamis it connects with roads to Blythe in the Palo Verde Valley. The \$660,000 road replaces the old Niland-Blythe Road closed by the Navy's Chocolate Mountain Bombing Range. It reduces from 165 to 90 miles the highway distance between Blythe and Brawley. About seven miles of the new road is over sand dunes. — *Ledger-Gazette*

Asks Preservation of Plank Road . . .

HOLTVILLE — Preservation of the historic old plank road across the desert from Yuma to Holtville is being urged by Congressman D. S. Saund. The congressman announced that he has received the assurance of Newton B. Drury, chief of the California Division of Beaches and Parks, that a study is being made concerning preservation of at least a portion of the road in the proposed acquisition of the Imperial Sand Hills in the State Park System.

NEVADA

Navy Using Sahwave Range . . .

LOVELOCK — For the first time since the end of World War II the Navy is conducting firing practice over

its 547,906-acre Basic Sahwave air-to-air gunnery range. Firing is planned to continue until January. Only machine gun bullets will be fired. The Navy has agreed with the Department of Interior not to shoot rockets, missiles or other flaming ammunition that might set the range on fire. — *Lovelock Review-Miner*

Lake Tahoe Park Planned . . .

INCLINE — Nevada's newest state park is in the process of being created at Sand Harbor, four miles south of Incline. Captain George Whitell gave the Nevada Park Commission a lease for approximately nine acres of Lake Tahoe beach property covering 1200 feet of lakefront. Truckloads of refuse and garbage deposited over the years have been removed from the property, and camping and parking facilities created. — *Nevada Appeal*

Gambling Taxes Distributed . . .

CARSON CITY — The controversial "wind-fall" gambling tax, which in effect spreads out the gaming taxes from Reno and Las Vegas to less populated areas, has distributed almost \$690,000 to the various Nevada counties. Each county received \$49,427.

Only three counties—Clark, Washoe and Douglas—paid in more than they received in the reapportionment. — *Battle Mountain Scout*

Tahoe Water Level Studied . . .

LAKE TAHOE — The thorny problem of where to set Lake Tahoe's water level was handed to the Nevada-California Inter-state Compact Commission. If the level of the lake is lowered because of shoreline damage, the amount of domestic water available drops; if the lake level is increased or kept the same, damage to valuable property along the shoreline will occur. — *Nevada State Journal*



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TRUE OR FALSE ANSWERS

Questions are on page 26

- 1—False. Mirages are often-seen in winter.
- 2—False. Salt Cedar plumes are lavender.
- 3—True.
- 4—False. Rainbow Bridge is in Utah.
- 5—True.
- 6—False. Bright Angel Trail leads from the South Rim to the bottom of Grand Canyon.
- 7—False. Death Valley was given its name by members of the Jayhawker Expedition in 1849.
- 8—True. 9—True.
- 10—False. Indian medicine men use dry pigment, applying it with their fingers.
- 11—True. Occasionally one will meet a striking gopher snake on the desert. But they have neither fangs nor venom. They are just bluffers.
- 12—True.
- 13—False. Mt. Whitney, highest peak in U.S.A. is visible from the Death Valley desert.
- 14—False. Calcite is too soft for arrow points.
- 15—True. 16—True.
- 17—False. Carlsbad Caverns are in New Mexico.
- 18—False. Historically, the Apaches are nomads.
- 19—True. 20—True.

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Las Vegas Population Up . . .

LAS VEGAS—City officials claim that on the basis of population estimates from Nevada's two principal cities, Las Vegas is now the biggest community in the state. Reno claims 52,500 persons—Las Vegas, 53,690. —Nevada State Journal

State Park Rehabilitated . . .

ELY—Charcoal Ovens State Park south of Ely has undergone considerable maintenance work. The historic ovens, built in the 1870s, were stabilized in order to check further deterioration. Picnic and camp facilities are provided inside the ovens.—*Ely Record*

NEW MEXICO

Tourism at Caverns Lags . . .

CARLSBAD—While most of New Mexico's National parks and monuments were attracting increased numbers of tourists this summer, Carlsbad Caverns National Park showed a marked decrease. During the first six months of 1958 the visitor total at the Caverns was 12,000 below that of the same period in 1957—175,951 compared with 187,076. A \$1,000,000 visitor center was recently completed at Carlsbad, along with a new bank of high-speed elevators which bring visitors up from the 700-foot level in a matter of seconds. White Sands National Monument was 10,000 visitors ahead of last year with a total of 149,607.—*New Mexican*

Land Grab Plot Ires Texans . . .

ARTESIA — State Representative Fred Cole's proposal that eight West Texas counties secede from the Lone Star State and join New Mexico, was met by a suggestion from Texas Governor Price Daniels that eastern New Mexico become a part of his state. Cole said the eight West Texas counties would receive better state representation, among other benefits. A third proposal was made earlier by the Alpine, Texas, City Commission, which called for the creation of a Big Bend State to be composed of Brewster, Presidio and Jeff Davis counties.—*New Mexican*

Indians Fight Peyote Ban . . .

ALBUQUERQUE — The Native American Church of North America—a religious organization employing the drug peyote in its rites—and three of its members filed a suit asking \$5000 damages and an injunction against the Navajo Tribal Council's enforcement of a ban on peyote. "From time immemorial," the suit contends, the church has used peyote in its services as "an indispensable part of prayers, rites and ceremonies performed by its members." However, the Tribal Council adopted an ordinance against the sale, use or possession of peyote.—*New Mexican*

UTAH

Salt Lake Dike Proposed . . .

SALT LAKE—A long-term Great Salt Lake diking program, which would provide scenic highways to two islands

and create the largest water storage lake in the state, was recommended in a report to the Utah Road Commission by a special advisory committee. The project calls for the diking off of approximately one-third of the Great Salt Lake by joining Promontory Point with the mainland near Saltair via Antelope and Fremont islands. Estimated cost of the project is \$12,065,000. Three rivers would empty into the 1,814,150-acre-foot fresh water bay at the eastern end of the lake—the Bear, Weber and Jordan.—*Salt Lake Tribune*

Flaming Gorge Recreation . . .

VERNAL — Expenditure of \$1,750,000 would be necessary by Federal government and private enterprise for the development of the first phase of recreation facilities in the Flaming Gorge Dam reservoir area. This was brought out in a preliminary report by the National Park Service, which recommended that administration of the recreational facilities for the area be under Federal control due to the fact the new lake will cross state lines. The report recommended a site in Lucerne Valley at the foot of Linwood Canyon as administrative headquarters. A second major potential recreation site is at Antelope Flat, directly opposite the Lucerne Valley site. Early development of a minor site, Dutch John Draw, also was recommended.—*Vernal Express*

Navajos Plan Tribal Park . . .

MONUMENT VALLEY — The Navajo Tribal Council voted to create a tribal park from Monument Valley's 29,000 acres of scenic and rugged grandeur. The Tribe appropriated \$100,000 for improvements. A spokesman said the action was taken chiefly to preserve the park's antiquity and check vandalism.—*Phoenix Gazette*

Ancient Homesites Uncovered . . .

GLEN CANYON — Prehistoric housing developments with as many as 100 rooms each are among the important discoveries of archeological salvage parties working along the Colorado River and tributaries above the Glen Canyon damsite. Some of the sites appear to be of much earlier origin than the area's 1000-year-old ruins thought to have been occupied by ancestors of Indian tribes now liv-



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ing in the Four Corners region. By mid-summer 300 sites heretofore unknown to scientists were discovered. Scientists hope that 1000 sites will have been found by the time the survey ends in October.—*Salt Lake Tribune*

Utes Oppose Administration . . .

ROOSEVELT — A group of 200 full-blooded Ute Indians have organized to fight the present system of administering their affairs. Julius Twohy of Whiterocks was named chairman of the group, known as the Independent Utes of the Uintah and Ouray Reservations. A referendum petition was filed with the Secretary of Interior calling for a vote by all adult members of the Ute Tribe on preference in tribal government.—*Salt Lake Tribune*

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MINES and MINING

Rifle, Colorado . . .

Union Oil Company of California's announcement that it was shutting down its multi-million dollar oil shale retort plant near Rifle because of "economic conditions," was met with renewed demand from many Western sources that the United States Navy and/or the Bureau of Mines resume full scale research work directed at transforming the vast oil shales of the Intermountain West to products commercially competitive with oil from wells. Union maintains that its process is now virtually competitive with oil produced from the ground, but the firm stressed the need for a 27½ percent depletion allowance on shale—similar to the allowance granted in the petroleum industry. The shale allowance is now 15 percent. Meanwhile, the Denver University's Research Institute made a report on a new process of oil shale reduction at the behest of the Oil Shale Corporation of Carson City, Nevada. An Institute spokesman said the new process will permit delivery of shale oil at \$1.42 to \$1.92 a barrel on the West Coast.—*Salt Lake Tribune*

Cerrillos, New Mexico . . .

The oldest lode mine in the United States continues in production. The Mina del Tiro Mine at Cerrillos, whose history goes back to the cruel days of slave labor before the Pueblo Uprising of 1680, is operating around the clock with a 15-man crew. The ores assay between 25 and 30 percent lead; 10 to 15 percent zinc; and 20 ounces of silver per ton. High grade ore is being shipped to El Paso.—*New Mexican*

• • •

Tintic District, Utah . . .

A rich lead-zinc-silver ore discovery apparently has been made by the Bear Creek Mining Company, domestic exploration affiliate of the Kennecott Copper Corporation, in the Apex ground of its East Tintic Unit. The Unit is a joint land contribution toward the Bear Creek exploration project in the old Utah mining district. First reports are that the ore finds were made by core drilling to a depth of about 150 feet into the foot wall of the great north-south fissure in the Tintic District.—*Salt Lake Tribune*

CONTROVERSY SURROUNDS NEW "WET-METHOD" FOR MINING URANIUM ORE

GRANTS — A revolutionary new "wet-mining" method of recovering uranium ore has been greeted with polite skepticism by uranium scientists in the Grants area. Jack Brady, former University of New Mexico geology instructor, and Melvin E. Richards, Yucca Mining and Petroleum Company president, flushed up the concentrated uranium ore from 2000 feet below the surface of the ground with cheap casing, similar to that used for deep water wells. Thus they bypassed expensive \$125 a foot mine-shaft sinking, hoisting, crushing and ball-mill operations now common in the industry.

The two miners predict their method of recovery will revolutionize the uranium industry by making it possible to mine "fringe" pockets of ore hitherto not commercially feasible to recover; cut time and cost in half on mining uranium ore; produce rare metal elements like selenium, beryllium and vanadium with comparative ease as by-products. The gamble to hydrologically mine the ore was made on the assumption that if uranium had been deposited in solution in the sandy formations of western Valencia and McKinley counties, it could be washed out again.

But the reaction to the new mining method was openly dubious. Tremendous technical difficulties lie in the path of any large scale underground leaching process, uranium experts contend. The claim that concentrated uranium ore was brought up in solution was doubted openly by many. Uranium ore lies in either sandstone or limestone formations and neither will go into solution except under intense heat.—*Grants Beacon*

• • •

Washington, D.C. . . .

Bonus payments program for uranium development was killed by the House Appropriations Committee. "In view of the testimony received concerning uranium ore reserves available to the Atomic Energy Commission, and the rate of delivery of ore to domestic processing mills, the need to stimulate the production of additional ore with bonus payments at this time is not apparent," the committee report stated.—*Salt Lake Tribune*



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Manhattan, Nevada . . .

White Caps Gold Mining Company reported a major new strike on its April Fool Claim. The exposed gold vein, discovered only 100 feet north-east of the original strike in the district, was described as one of the most important finds made in Nye County in many years. A five-foot vein was exposed for a length of 50 feet, and the ground shows values up to \$500 per ton. Further exploration is in progress to determine the full length of the vein.—*Tonopah Times-Bonanza*

Mountain City, Nevada . . .

Mountain City Uranium Company is now working in what appears to be shipping grade molybdenum ore. The discovery was made in the Cope Mining District in Elko County. The firm's tunnel was extended a distance of 375 feet, the last 45 feet driven through the formation carrying the previously unreported metal. Original purpose of the tunnel, started last year, was to contact a rich uranium ore showing discovered on the surface. — *Pioche Record*

Taos, New Mexico . . .

United Western Minerals Company has completed organization of its subsidiary, United Perlite Corporation, and financing of \$300,000 for the building of a perlite mill in Taos County. The plant was scheduled for completion September 1. Increased acceptance of perlite products, chiefly in the field of lightweight structural aggregates and thermal and acoustical insulation, has led to greatly increased interest in the possible uses of volcanic glass. Reports indicate New Mexico has approximately 60 percent of the known perlite reserves in the nation. — *New Mexican*

Cripple Creek, Colorado . . .

The famed El Paso Mine at Cripple Creek has been re-opened—but for a new purpose. The dark recesses of the mine's second level are being used for the cultivation of mushrooms.—*S.M.S. Matrix*

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Salt Lake City . . .

Kennecott Copper Corporation resumed a five-day work week at its four Western properties in Utah, Nevada, Arizona and New Mexico. The production step-up resulted from encouraging copper sales in June and July. Kennecott operated its domestic properties on a seven-day work week during 1957, then cut back to six days in January, five days in March, and four days, at most departments, in May.—*Salt Lake Tribune*

Washington, D.C. . . .

The demand for beryllium in the next few years is expected to outgrow the supply of the strategic ore available, U.S. Bureau of Mines Director Marling J. Ankeny declared. "Nuclear scientists and rocket technicians pin some of their fondest hopes on beryllium, its alloys and compounds," Ankeny said. About 100 mines produce the entire U.S. domestic supply of the metal—about 460 tons annually. — *Pioche Record*

Grants, New Mexico . . .

General Jess Larson, president of the Uranium Institute of America, warned the industry that it must fight for its very life in the years ahead. "The government is not going to continue to bless our industry with an ever increasing market," he declared. "Military requirements will probably be met in large part during the next few years." Larson pointed out that the situation is made particularly difficult for the rapidly-growing industry by the lack of an appreciable private market for uranium. "What's more," he added, "I can't see such a market developing for the next 10 years." — *Grants Beacon*

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GEMS AND MINERALS

Plantlike Geode Inclusions Are Of Mineral Origin, New Study Shows

The plantlike structures sometimes seen in the interior of thundereggs and geodes have long intrigued amateur collectors.

The late Frank L. Hess, formerly of the U.S. Geological Survey and Bureau of Mines, and other experts maintained that the slender filaments, threads, strands, moss-like dendrites, fringes, plumes, sheets, ribbons and branched tubules found in an infinite variety of form and color in opal, agate and chalcedony, represented species of algae.

Ronald W. Brown of the U.S. Geological Survey has recently completed a study on this subject which refutes the algae explanation. Examination of thundereggs under a binocular microscope disclosed that the plantlike features are tubular — not segmented or jointed with cell after cell in linear rows as are the filaments of fresh water algae. Significant also is the fact that no spores or other reproductive structures have been recognized as such among the supposed algae filaments.

Brown gives two possible clues for the filaments: the natural helicitates sometimes



"Moss" agate. Despite its remarkable resemblance to living plants, the pseudoalgae along edges of this specimen is mineral in origin. Photo by E. G. Saxton.

seen in caves and other sites; and the so-called chemical gardens grown in the laboratory.

Brown's research indicates that the sequence in the life of a thunderegg was roughly as follows: first came the cavity, by one or another of the popular theories: expansive gases in the molten lava; relief of hydrostatic pressure and tension; recrystallization of the original material followed by shrinking, etc. The cavity was surrounded by a chemically complex matrix that, per-

haps when still warm, underwent chemical changes as a concomitant of the circulation of connate as well as surface waters.

These waters, having picked up mineral reagents, including salts of iron and manganese, and various silicates, passed through the porous walls or seeped in through cracks, infiltrating and filling the cavity, the solution becoming a colloid or gel. According to gravitational and perhaps electrical factors, such minute suspended globules of mineral matter as were present or were formed, arranged themselves below in horizontal layers, the upper part of the solution remaining relatively pure and not visibly layered. Then, as soon as the chemical condition of the gel became suitable, there grew into it, from the supply of salts along the walls, the filaments that are now erroneously called algae.

How long the gel in thundereggs remained in that state is problematical, but eventually some as yet unknown condition initiated the transformation of the soft gel into cryptocrystalline agate and chalcedony, thus embedding the fragile filaments in a hard matrix and preventing their destruction by earth movement.

NEW GEM STONE FOUND IN OREGON

A new gem stone—Tracinite—has been found in an area west of Drews Reservoir in the Hay Creek-Dry Valley section of Oregon. Best route into the area is by way of Dent Creek Road which circles around the northwest end of the reservoir.

The material resembles agate in that its brilliant colors are in layers, clouds and variegated formations; and tourmaline in its prismatic shapes. It is of the quartz type of stone, only harder.

Tracinite was discovered seven years ago by Mr. and Mrs. Don Tracy. During the intervening years specialists were unable to classify the material in relation to known gem stones, and the Tracys announced their find to the public.—San Fernando Valley, California, Mineral and Gem Society's *Rocks and Gems*

HARD COAL FASHIONED INTO NEW JEWELRY LINES

Introduced as a novelty two years ago, anthracite jewelry has developed into a growing business. The original hard coal jewelry line included, for women: earrings, pendant-type bracelet, necklace and ring; and for men: cuff links and tie bar. Now LeBeau, New York City jewelry designer, has created a set of three silver-and-anthracite dress shirt studs for men.

The coal is not treated in any way. It is shipped in large lumps directly from the mine to the jeweler, who chops it down to the size needed. All that remains necessary to do is to polish the coal, and set it.—*Chips and Facets*

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SPECIAL DISPLAYS SLATED FOR BIG SEATTLE SHOW

Gem and mineral clubs of the Seattle, Washington, area will present their fourth annual show at the Civic Auditorium, October 4-5. Exceptional displays have been scheduled, show officials said.

George Ashley's bowls and his collection of rough gems will be brought from Pala, California. Cave gypsum crystals and other rare crystals will be shown by George Green, Tacoma. Oriental carvings will be displayed by Mr. and Mrs. Kilbane, Seattle.

Among other displays will be the Stone Age Chimes arranged by Mr. and Mrs. Wm. Pearce, Edmonds; and one of the only two recorded meteorites of Washington owned by Byrum Martin, Seattle.

Demonstrations will include the identification and carving of gems, the making of cabochons, faceting, jewelry making, etc. A special demonstration on arrowhead chipping by Roy Reid of Yakima also is scheduled.

Doors will be open from 10 a.m. to 10 p.m. on Saturday, and from 10 a.m. to 7 p.m. on Sunday. Admission is 50c.

PRECIOUS CORAL SELLS FOR \$400-\$600 OUNCE

Since early Paleozoic times, various corals have been important rock-forming agents. In warm, shallow parts of the ocean, limestone is often formed by the combined activity of coral polyps and calcium-precipitated bacteria. These coral-producing polyps form colonies which increase mainly by gemmation or budding.

The red or precious coral of the Mediterranean grows about a foot in height. It occurs in many beautiful tints and shades and takes a high polish. The finest rose-pink varieties command prices of \$400 to \$600 and more an ounce.—Wilbur Moore in the *South Bay Agatizer*

Portland, Oregon, will be the host city for the 1959 American Federation of Mineralogical Societies' annual convention and show. September 5-7 dates were set for the affair. National officers awarded the 1960 show to the California Federation, to be held in conjunction with its convention-show that year at Eureka. — *Rockhound news and views*

A glass cutter has been found effective in the cutting of agate. It works well, and saves both time and wear on the trim saw. — *Pseudomorph*

WINTER GEM SHOW SCHEDULE

October 2-12 — Fresno, California. Gem and Mineral Society's show in conjunction with District Fair.

October 4-5—San Antonio, Texas. Rock and Lapidary Society's show at Witte Museum Auditorium.

October 4-5 — Eureka, California. Humboldt Gem and Mineral Society's show at Redwood Acres Fair Grounds.

October 4-5—Seattle, Washington. 4th Annual Seattle Regional Gem and Mineral Show, Civic Auditorium.

October 4-5—North Hollywood, California. San Fernando Valley Mineral and Gem Society's show at Victory-Van Owen Recreation Building, 12240 Archwood Street.

October 11-12—Trona, California. Searles Lake Gem and Mineral Society's show.

October 11-12 — Coeur d'Alene, Idaho. North Idaho Mineral Club's show.

October 11-12 — Hollywood, California. Lapidary and Mineral Society's 11th Annual Lapidary and Mineral Show at Plummer Park, 7377 Santa Monica Blvd.

October 11-12—Topeka, Kansas. Gem and Mineral Society's show.

October 11-12—Napa, California. Gem and Mineral Clubs of Redwood Empire Counties' Rocks and Redwoods Gem Festival.

October 11-12—San Angelo, Texas. Twin Mountain Gem and Mineral Society's show at Town House Hotel.

October 18-19—Des Moines, Iowa. Lapidary Society's Rockhound Roundup at Veteran's New Auditorium.

October 18-19 — El Segundo, California. South Bay Lapidary and Mineral Society's show at Recreation Park, 300 East Pine Street.

October 18-19—San Francisco. Gem and Mineral Society's Fifth Annual Gem and Mineral Fair at Scottish Rite Auditorium, 1270 Sutter St.

October 19 — Oklahoma City, Oklahoma. Mineral and Gem Society's show at Municipal Gymnasium.

October 25-26—Burbank, California. L.E. R.C. Rockcrafters Club's 3rd Annual show at 2814 Empire Ave.

November 1 - 2 — Lynwood, California. Compton Gem and Mineral Club's show at Community Center, corner of Bullis Road and Century Boulevard.

November 1-2 — Sacramento, California. Mineral Society's show at Turn Verein Hall, 3349 J St.

November 7-11—Barstow, California. 3rd Annual Rockhound Roundup and Auction (11 miles west of Barstow).

November 14-16 — Calexico, California. Imperial Valley Gem and Mineral Society's show at De Anza Hotel.

November 28-30 — Barstow, California. Mojave Desert Gem and Mineral Society's annual Swap Days.

November 29-30—South Gate, California. Mineral and Lapidary Society's 2nd annual show at Civic Auditorium.

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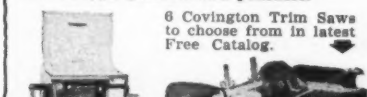
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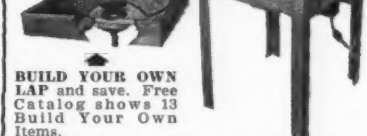
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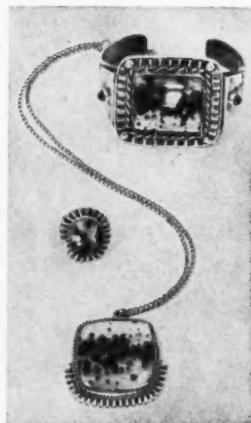
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AMATEUR GEM CUTTER

By Dr. H. C. DAKE, Editor of The Mineralogist

A number of readers have inquired where agates advertised as "Fairburn" originate. This material is found in the Lakota formation in the vicinity of Lake Johnny Creek, southwest of Fairburn, South Dakota, on highway 79, south of Rapid City. This locality is near Wind Cave National Park, on the southeast side of the Black Hills. Much of the "agate" of this locality is a jaspery conglomerate, cemented with agate and chalcedony. It takes an excellent polish and is well suited for gem cutting and various ornaments.

Fairburn agate is also found at a number of other localities in the Midwest. At one time this material was more or less plentiful, but during the past two decades it has become scarce and hard to find at any of the localities. It is well suited for cabinet specimens after lapidary treatment. Many of the specimens are quite colorful.

Mass and other types of agate are found at various localities on the southwestern side of the Black Hills. A bluish type of chalcedony is abundant at many places in the Bad Lands. Occasional banded and other agate types are found within the higher uplift of the Bad Lands, and among the gravel debris within or beyond the foothills.

The notable, but scarce, calcite septarian concretions of this region occur along the Cheyenne River and lower portions of its tributaries, southeast and east of the Black Hills. These unique concretionary formations occur, in situ, in the upper portion of the Pierre Formation. Fine, intact specimens of septarians are not common, and they should always be sawed open, never broken. Fine specimens make attractive cabinet specimens; they are often of large size, filled with beautiful golden calcite, arranged in a pleasing pattern.

* * *

Jewelry making for the amateur or for the gem cutter requires surprisingly little equipment, since most of the work is done by hand labor. The main item is a Presto-Lite tank or a similar outfit, which generally cost about \$25.00. Or if desired, city heating or cooking gas may be used, along with a foot bellows to give low pressure compressed air used in soldering, welding, and fusing various metals for casting. Gold, silver and copper all fuse at near the same temperature, and can be readily handled with this inexpensive equipment. Platinum requires an additional oxygen tank.

* * *

The simple inexpensive polariscope (Polaroid equipped) recently placed on the market, offers many fascinating possibilities.

In the testing of gem stones (non-opaque) the polariscope has been found useful. Glass imitations can be instantly detected by merely placing the stone (mounted or unmounted) between the crossed "Nicols." If a glass imitation, the stone will become almost invisible. Gem minerals belonging to the isometric system of crystallization will, of course, give the same reaction as glass, and this must be kept in mind.

Under the crossed "Nicols" of the polariscope any gem stone of one of the crystal systems other than isometric will pass light and remain clearly visible. By holding the stone within the instrument and rotating the analyzer, gems which are dichroic will be seen to change colors at

various positions. In some instances, like with most amethysts, when viewed through the girdle the twin colors will appear simultaneously, one above the girdle and the other below in the pavilion. The polariscope, however, does not as a rule show the twin colors simultaneously as seen with the hand dichroscope. The polariscope is a different type of instrument and experiment with a number of known gem minerals will indicate its wide utility in making correct determinations.

Since the synthetic gem stones of the sapphire type (including ruby) are crystalline in their structure, this material will give a reaction with the polariscope, like any other hexagonal substance. However, the spinel type of synthetic material, being of a different nature, can be readily distinguished from the sapphire family. These are the two main types of synthetic gem materials of commerce and the polariscope will serve to distinguish them.

Beautiful interference colors can be seen with the polariscope. A thin section of selenite, for instance, will show the various colors, first order red, etc. A section of crystal quartz when viewed looking down on the optic axis (C axis) will show many gradations of colors as the analyzer is rotated. The same is true of mica and certain other minerals. For viewing the interference colors a section too thick or too thin will not give color, the colors appearing in their various "orders" according to the thickness of the section or fragment. Many rock sections also will show various colors and aid in determining the minerals present. The polariscope, however, is not equipped with lenses and therefore will give no magnification, hence the substance under examination must be reasonably large in size.

For an interesting demonstration of in-

terference colors, various thicknesses of ordinary colorless cellophane can be held between the polarizer and analyzer. By this means different intensity orders of colors will be visible. A regular quartz wedge as used on polarizing microscopes, serves well and shows the orders accurately, since the wedge has been ground for this purpose. By experimenting and testing, the careful lapidary can make a fairly good quartz wedge. Mica "steps" also are readily made. These demonstrations can be made with the polarizing projection lantern and thrown on the screen three feet in diameter.

The above are only a few uses to which the polariscope admirably lends itself.

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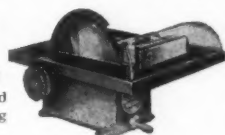
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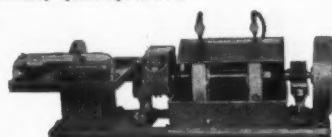
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**DESERT MAGAZINE
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PALM DESERT

CALIFORNIA



By RANDALL HENDERSON

RECENTLY MY good friend Tex Reese gave me four little seedlings of his new hybrid mesquite tree (see page 4) to plant in our *Desert Magazine* grounds.

When I told our maintenance man where to plant them he gave me a puzzled look. Then I learned something that amazed me. Here was a 35-year-old man who did not know how to plant a tree—had never in his life planted one. So I helped him plant them.

When I mentioned this experience to friends, some of them confessed that they too had never planted a tree.

To me that is a tragic thing. Perhaps my many years on the desert have given me an exaggerated idea of the value and importance of trees, but I still think that every youngster should have the experience of planting a tree—and then watching it grow to maturity.

What a drab unhealthy place this earth would be without its trees! For every leaf of every tree is a tiny factory engaged much of the time in taking radiant energy from the sun and giving off water vapor and oxygen which purify the atmosphere and make this planet a habitable place for human beings.

But I am thinking, not so much about the overall benefits of trees to mankind, but rather about the values which accrue to the individual who plants the seed or the cutting or the sapling, tends it through the years, and observes for himself the miracle of its growth and the beauty of its maturity. For in the life cycle of a tree is revealed much of the story of God's creation.

One is never too old to plant a tree—and if you have never had that experience I would recommend it—even if you have to play hooky from church some Sunday to do it. For in the growth and maturity of a tree a thoughtful person will derive more understanding of and faith in the works of the Creator than is possible from any 45-minute sermon.

* * *

After many years of litigation the feud between California and Arizona over the use of the water of the Colorado River is nearing an end, although it may be many months before the Supreme Court renders a final decision.

To me this long water controversy has involved an appalling waste of time and talent. Water is a natural resource upon which all life depends—and as population increases, the equitable distribution of the limited supply will become more and more critical. If this is true, then human needs and not political boundaries must sooner or later become the basis for the allotment of water. The water of the Colorado River—of every river which serves domestic and irrigation purposes—should be diverted to the places where it will serve most beneficially and economically the needs of American citizens,

regardless of whether their homes are in Arizona or California or Kalamazoo. It is simpler to move people than to move rivers.

* * *

Many years ago my friend Marshal South convinced me that it was possible—even on the desert—for a person to live off the country as did the Indians before white men came to the Southwest.

I thought of Marshal and his experiment in primitive living one evening recently when a radio reporter told of plans by the Civil Defense administration for creating more bomb shelters for the protection of Americans in the event of an attack.

There will never be such an attack, I am confident, but if the time comes when it is necessary for me to seek protection in a bomb shelter I am going to quit even pretending that I am a civilized man in a civilized world.

My immediate destination will be a remote desert spring where, with my family and a few kindred souls, I will try to make a new start. And as I go prowling around in a G-string looking for edible seeds and some tender roots on which to make a meal, I am going to become a crusader for one idea. I am going to try to convince the other surviving savages that in starting to rebuild this bomb-shattered world we should eliminate that great civilized institution known as "competitive enterprise"—meaning competition for dollars and land and world trade and beans.

We will pattern our new civilization after the model of the natural world and make cooperation, not competition, the basis of progress.

Oh yes, we will have competition—but it will not be this frenzied game of trying to accumulate more rabbit skins than one can possibly use while some other poor devil shivers in the cold. We'll argue among ourselves over the election of a chief, and we'll try to raise more maize on the little patch of ground below our spring than our dumb neighbor can raise on his. But after we've proved that we are smarter than he is, we'll take our surplus corn over and give to him so he won't be hungry. And if any member of our tribe ever tries to corner the market on mesquite beans or make a profit on an improved way of molding clay pots, we'll banish him from the tribe.

We won't build our new world quite as fast as has been going on the last 100 years, but it will be a very secure place for unselfish men and women. And there'll be a lot of beauty in it. We may not have as many and such effective gadgets with which to slaughter each other, but there'll be plenty of food and shelter and more real freedom than we've ever known, because every human will be trying to help every other human being acquire an ample supply of the essential things of life—and none who values his neck will ever seek to deprive his neighbor of them.

BOOKS of the SOUTHWEST

THROUGH GRAND CANYON RAPIDS ON A LOG RAFT?

In the fall of 1867, two years before Major John Powell and his party successfully navigated the rapids of Grand Canyon, a bedraggled voyager on a raft arrived at Callville below the rapids, and told an amazing story of having come through the Grand in 14 days practically without food.

Because a feat under the circumstances appeared so hazardous as to be almost impossible, James White's story has been largely discredited by historians. Robert Brewster Stanton who later navigated the Grand Canyon as a member of the Brown-Stanton survey party, gathered what information he could as to the authenticity of White's claim, and finally, in the book *Colorado Controversies* concluded, "From my own investigation I no longer say I believe it could not happen—I say it *did* not happen."

More recently, R. E. Lingenfelter, who has gone into the matter perhaps even more exhaustively than did Stanton, has concluded that White's story is approximately correct — and that White actually was the first white man to conquer the rapids.

In his book *First Through the Grand Canyon*, recently off the press, Lingenfelter presents evidence to confirm much of the White story.

Otis Marston, who has done more research perhaps than any other historian on the navigation of the Colorado, in a foreword to the book writes: "The author serves well by presenting new material and a cogent outline of events based on the sources which were known to him. . . . Should White's name head the list of those who have traversed the Grand Canyon by water?"

Published by Glen Dawson of Los Angeles. 119 pp. Bibliography and index. Limited edition. \$7.50.

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FORAY INTO NEW MEXICO BY TEXANS MAKES GOOD READING

Noel M. Loomis, author of three dozen novels, including *Johnny Concho* and *Rim of the Caprock*, has written his first non-fiction book, *The Texas-Santa Fe Pioneers*.

It is an exceptional Southwestern work, and the author's training in fiction transforms normally cut-and-dry history into very entertaining narrative.

In 1841 the young Texas Republic was in serious economic trouble, and to help alleviate this situation an expedition of 320 soldiers and traders set off from Austin to open a trade route with prospering Santa Fe, mercantile center of the northern Mexican Empire.

Undisciplined and poorly organized, the march is monumental for blunders committed and hardships suffered by these men. Those Texans who were not killed by disease, fatigue or Indians, were taken prisoner by the Mexicans. From near Santa Fe they were marched to Mexico City at gun point. But underlying this tragic saga emerges the American frontier spirit of perseverance which led to final victory in the Southwest.

In doing research for this book, Loomis draws heavily from the narrative of George Kendall, an aggressive and imaginative pioneer war correspondent.

The implied purpose of the Texan foray into New Mexico remains controversial even today. The author supports the contention that the Texans were not bent on conquest, but on establishing commerce. Most historians, including Hubert Howe Bancroft, take the opposite view, and Loomis' arguments are illuminating and convincing.

The appendices include biographical roster of the Texas expedition; Kendall's itinerary; biography; and index.

Published by University of Oklahoma Press; fold-out contemporary map plus maps showing route and day-by-day incidents; illustrations; appendices; 329 pages; \$5.

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